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THE EFFECTS OF THE SINGLE PROCESS INITIATIVE ON AEROSPACE SUBCONTRACTORS

by

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The purpose of this study was to identify and discuss the difficulties aerospace subcontractors have faced since the implementation of the Single Process Initiative (SPI). In addition, the thesis provided recommendations to address these difficulties and promote greater industry participation in the SPI. The research determined that aerospace subcontractors have experienced increased costs and/or administrative burdens due to prime contractors utilizing the block change process. The methodology used to identify the apparent inequities faced by the subcontractors was a review of current literature and 40 telephone interviews with representatives of aerospace prime contractors and subcontractors. The interview questions either complimented the information garnered from the literature or asked the respondents to provide personal opinions about the SPI. The questionnaires were compared to one another, analyzed and recommendations were generated. Specifically, the recommendations included; continue to promote the use of the SPI, open lines of communications between prime contractors and subcontractors through teaming, the Management Council should identify the best possible practices in each proposal, more realism needed with Rough Order of Magnitude estimates, and the Government should better categorize SPI proposals and ensure more timely recommendations from key stakeholders during the proposal approval process.

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THE EFFECTS OF THE SINGLE PROCESS INITIATIVE ON AEROSPACE SUBCONTRACTORS

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ABSTRACT

The purpose of this study was to identify and discuss the difficulties aerospace subcontractors have faced since the implementation of the Single Process Initiative (SPI). In addition, the thesis provided recommendations to address these difficulties and promote greater industry participation in the SPI. The research determined that aerospace subcontractors have experienced increased costs and/or administrative burdens due to prime contractors utilizing the block change process. The methodology used to identify the apparent inequities faced by the subcontractors was a review of current literature and 40 telephone interviews with representatives of aerospace prime contractors and subcontractors. The interview questions either complimented the information garnered from the literature or asked the respondents to provide personal opinions about the SPI. The questionnaires were compared to one another, analyzed and recommendations were generated. Specifically, the recommendations included; continue to promote the use of the SPI, open lines of communications between prime contractors and subcontractors through teaming, the Management Council should identify the best possible practices in each proposal, more realism needed with Rough Order of Magnitude estimates, and the Government should better categorize SPI proposals and ensure more timely recommendations from key stakeholders during the proposal approval process.

TABLE OF CONTENTS

I. INTRODUCTION

After the Single Process Initiative was announced by Secretary of Defense Dr. William Perry and Under Secretary of Defense (A&T) Dr. Paul Kaminski on December 8, 1995, it was lauded by major contractors as a great new advance in Government/Industry relations.

However, after nearly three years of implementation, the Single Process Initiative (SPI) has come up against some criticism. In particular, aerospace subcontractors have voiced disappointment with the initiative. While large prime contractors, like the Boeing Corporation and the Hughes Aircraft Company, have maximized the use of performance specifications and trimmed their processes, industry subcontractors have faced economic difficulties. The reason is many aerospace subs must now manage not one military specification, but numerous commercial specifications. Additionally, subcontractors face new multiple quality standards for similar or identical products.

It is important that the Government examine possible inequities resulting from the SPI because if the subcontractors cannot operate profitably, industry competition will suffer. This situation could spur an eventual increase in contractor prices.

Unfortunately, there are relatively few proposed solutions to the subcontractor problem in the current literature pertaining to the SPI. But based upon the research of industry representatives conducted for this thesis, it was found that better cooperation between the Government, primes, subs and suppliers would be a positive step towards maximizing the SPI. The Government's objective should be to facilitate an open line of

communication between the prime contractors and subcontractors so that the SPI can be fully utilized by all members of the aerospace industry.

Given the identified problem and the Government's current search for answers, this study will provide viable analysis. Ideally, the findings presented herein will help resolve some of the problems cited in current literature and voiced by aerospace subcontractors during the interview portion of this work. In addition, such research would be an important part of the contract administration body of knowledge, as the literature search revealed no other research projects centered on the SPI and aerospace subcontractors.

The objectives of this thesis are the identification of the problems attributed to the SPI and a discussion of potential solutions. In pursuit of these objectives, the researcher will address the implementation of the SPI, any challenges that the initiative has caused, and provide alternatives which can enhance industry participation in the SPI. The approach taken to answer the research questions is a review of the literature and an analysis of forty interviews administered to representatives of major aerospace contractors and subcontractors.

A. BACKGROUND

The broad environment that the research centered upon is the defense aerospace industry. Each year, billions of Federal dollars are allocated to purchase advanced aircraft, electronics and aviation support equipment. Given the huge outlays, political

oversight, and significant impact on the industrial base, there is great incentive for the Government to closely monitor any new initiative, such as the SPI.

Research on the effectiveness of the SPI is also important to the Department of Defense (DoD) because of the trend toward acquisition reform and continuous process improvement. An initiative such as the SPI, which has as its goals the stimulation of an industry and the cutting of costs, should not be instituted and then allowed to run unfettered. If problems exist but are not dealt with quickly, resolutions may become harder to determine and the Government's objectives could become forsaken. Moreover, the effects of the SPI are wide-ranging, influencing the decisions of not only the largest of America's corporations, but companies run by a handful of employees. Thus, the Government has a socioeconomic interest in seeing problems related to the SPI being contained or eliminated.

Research conducted on the SPI is also important to other contract administration professionals. It is the members of the Contract Administration Office (CAO) who must administer the SPI. So that they may participate in the on-going process improvement of acquisition reform initiatives, research which reveals inequities expressed by industry stakeholders (e.g., aerospace subcontractors) is valuable information.

B. OBJECTIVES

This research will assess the Single Process Initiative (SPI) with particular regard to how this DoD action has affected subcontractors to defense aerospace industry prime

contractors who have exchanged military specifications for commercial specifications.

The specific objectives of this study follow:

1. Provide background of the SPI.

2. Identify how contractors have implemented the initiative and how these actions have affected subcontractors.

3. Solicit opinions from industry representatives and present the findings such that trends in the data can be determined.

4. Provide recommendations based upon the trends in the data.

C. THE RESEARCH QUESTION

Primary Research Question:

How has the Single Process Initiative affected progress in the stream-lining of the acquisition process for subcontractors supporting the aerospace industry?

Secondary Questions:

1. What is the Single Process Initiative, to include the intentions of the Government in instituting the policy, the current policy, the projected benefits, and who is responsible for the implementation of the policy?

2. How are the aerospace companies participating in the SPI and how are they flowing down adopted changes to their principal subcontractors?

3. What are the key issues facing the subcontractors of the aerospace industry as a result of prime contractors implementing the SPI?

4. How has the SPI affected aerospace subcontractors' processes, manufacturing plans and costs?

5. Is there a need for the SPI process to be changed based upon how it has affected the subcontractors of the aerospace industry, and if so, how?

D. SCOPE OF THE RESEARCH

The scope will include: (1) a review of the SPI, (2) a discussion of issues aerospace subcontractors have faced as a result of the implementation of the SPI, (3) a determination of whether the Government has a place in the resolution of concerns voiced by subcontractors with regard to the SPI, and, (4) potential actions to be taken by the Government in order to improve the SPI and encourage greater industry participation in the initiative.

What was not focused upon is the exact financial hardship that the SPI may have caused subcontractors. Because the initiative is relatively young, and changes often affect overhead costs, it would be an exercise in conjecture to determine exact dollar figures at this point in time. Also not considered was any potential legislative change that would affect the SPI and aerospace subcontractors. While several of the interviewees suggested that Congress make changes to the privity of contract law, this again invites the use of hypothetical reasoning.

It was decided that in the interest of improving an existing process, the SPI would be evaluated as an active, acquisition reform initiative managed by the DoD and currently used by civilian contractors.

E. LITERATURE REVIEW AND METHODOLOGY

An important part of this research effort is the literature review. As yet, there are no books of criticism available on the SPI that may help the student understand the subject. Thus, in order to understand the SPI in its entirety, the researcher considered the

opinions of Government and industry spokesmen as well as training documents and general informational pieces provided through the Internet and other electronic sources. From these multiple sources, the researcher consolidated the information and provided a view of the SPI from its inception to its current state. What the reader will find is the basic mechanics of the SPI, followed by the objectives of the initiative as deemed by the Government, how contractors have participated in the process and what members of the aerospace industry think about the SPI. From this literature review, the reader will see that the SPI has merits and deficiencies.

The methodology used in this thesis research will consist of the following steps:

1. Conduct a literature search of books, magazine articles and other library information resources.

2. Obtain Prime and subcontractor sentiment and concerns via a questionnaire.

3. Conduct interviews telephonically with selected aerospace prime contractors and subcontractors.

F. DEFINITIONS

Per the Federal Acquisition Regulation (FAR), the following definitions are germane:

1. "Prime contract" means a contract or contractual action entered into by the United States for the purpose of obtaining supplies, materials, equipment, or services of any kind. [Ref. 1:part 3.502]

2. "Prime contractor" means a person who has entered into a prime contract with the United States. [Ref. 1:part 3.502]

3. "Privity of Contract" means a contractual relationship between the Government and a contractor. There is no such relationship between the

Government and a subcontractor who is subordinate to a contractor. [Ref. 1:part 42.505]

4. "Subcontract" means any contract entered into by a subcontractor to furnish supplies or services for performance of a prime contract or a subcontract. It includes but is not limited to purchase orders, and changes and modifications to purchase orders. [Ref. 1:part 44.10]

5. "Subcontractor" means any supplier, distributor, vendor, or firm that furnishes supplies or services to or for a prime contractor or another subcontractor. [Ref. 1:part 44.10]

G. ORGANIZATION OF STUDY

The following is an outline of how the remaining thesis chapters are organized and what is addressed in each:

II. Background and Literature Review
- A. What is the Single Process Initiative?
- B. What are the intentions of the Government?
- C. The current policy and implementation.
- D. The projected benefits of the SPI are revealed.
- E. Examples of how contractors are implementing the SPI.
- F. Concerns of subcontractors.
- G. Acknowledgment of problems and proposed resolutions.

III. Methodology
- A. There will be a discussion of data collection methods employed to answer the research questions.
- B. Questionnaires used to interview selected aerospace prime contractors and subcontractors will be revealed.

IV. Data Presentation
- A. The results of the interviews will be revealed.
- B. The data will be presented with quantitative totals, qualitative data and a graphic representation based upon frequency of responses.

V. Data Analysis
- A. The results of the interviews will be analyzed.

B. The researcher will concentrate on determining the motivations of the respondents so that a thorough understanding of the issues may be achieved and the development of trends in the data can be accomplished.

VI. Recommendations and Conclusions

A. Based upon the analysis of the previous chapter, trends in the data will be determined.
B. Recommendations based upon the trends will be presented.
C. Research questions will be answered.
D. The chapter will close with recommendations and ideas for further research on this topic.

II. BACKGROUND AND LITERATURE REVIEW

The two-fold purpose of this chapter is to provide background information about the SPI and to conduct a review of relevant commentary about the initiative. While it is nearly impossible to cite and discuss every printed word concerning the SPI, the chapter will endeavor to meet its purpose by providing selections from a wide range of perspectives. The multiple sources include: Department of Defense memorandums, official press conferences and congressional testimonies; Government-owned web-pages and Service training aids; and, civilian studies, web-pages, press releases and news reports.

The chapter will examine the SPI from one end of the spectrum to another. More specifically, the discussion will begin with the definition of the SPI and the Government's intent in promoting the initiative. Following this background, the focus will be on SPI policy and examples of implementation. The chapter will then concentrate on observations from those who have recognized the potential of the SPI. Finally, the problems voiced by aerospace subcontractors will be examined as well as commentary about these problems by Government and civilian spokesmen. The following subparagraphs will support this structure: 1) definition of the Single Process Initiative (SPI); 2) the intentions of the Government in instituting the SPI; 3) the current policy to include who is responsible for implementation; 4) the projected benefits of the SPI; 5) examples of how contractors are implementing the SPI; 6) concerns subcontractors have

expressed about the SPI; and, 7) acknowledgment of the problems and the latest attempts to resolve them.

A. WHAT IS THE SINGLE PROCESS INITIATIVE?

According to the U. S. Army *Single Process Initiative Guidebook*, "The SPI is a key component of the DoD Acquisition Reform Initiatives to move towards performance based contracting with industry using best practices and commercial processes in lieu of military standards and specifications." [Ref. 2:p. 1] The *Guidebook* goes on to explain that the Government sees benefit in the reduction of multiple processes that a single contractor is required to maintain because of the military specifications found in existing contracts. As long as performance requirements can still be met, the SPI permits contractors to determine the most efficient manufacturing method.

Prior to the SPI, some manufacturers making similar products for both the DoD and commercial buyers were forced to comply with both military specifications and commercial requirements. With the SPI, manufacturers have the opportunity to please both customers while reducing overhead costs and saving the Government money. A specific example of this situation is provided by the Undersecretary of Defense for Acquisition and Technology, Dr. Paul G. Kaminski during a March 17, 1997 DoD briefing:

> I was describing soldering at the Raytheon Corporation in which we had eight different soldering processes in place. Three were commercial, five were imposed by the Department of Defense. And my question here was could we get down to a fewer number of soldering processes, because we're spending our money to train people to document those various processes. Could we get down to a fewer

number of processes, and if we could, could we use the commercial processes? [Ref. 3]

To answer Dr. Kaminski's question, we can see that the *Defense Acquisition Deskbook* (DAD) states that military specifications and standards can be eliminated and commercial processes adopted through the "block change" process. This process begins when a contractor submits to his DCMC office a proposal identifying various military requirements which could be replaced as a "block" by commercial specifications and standards. Then, a Management Council comprised of DCMC personnel, Service representatives (which may include buying command representatives), and DCAA auditors consider the request and issue a response within 120 days. If the proposal is agreed upon by the Government, an Administrative Contracting Officer (ACO) issues a change to an existing contract and assists in the determination of an equitable adjustment.

B. INTENTIONS OF THE GOVERNMENT

The intention of the Government in advocating the SPI is to add fuel to the acquisition reform movement. There are numerous examples in the literature that support this contention. During a May 1, 1997 testimony before the United States Senate Committee on Governmental Affairs, the Principal Deputy Under Secretary of Defense for Acquisition and Technology, R. Noel Longuemare, first discussed the need for acquisition reform, then articulated the goals of the SPI. Mr. Longuemare admitted that the current state of DoD acquisitions is the result of decades of stifling bureaucracy that can be remedied over time:

> Real acquisition reform requires a lasting commitment to a continuous process of improving a system that took over 50 years to build. During this 50-year construction period, the watchwords were rules and red tape. Today, the watchwords are empowerment, teamwork, and continuous improvement. The Department must continuously evaluate the way it does business in order to ensure that the war fighter has access to leading edge technology that is affordable and militarily effective. [Ref. 4]

One example of this "continuous improvement" provided by the speaker is the SPI. Mr. Longuemare discussed the initiative and announced the following goals for the SPI: "Our goals are to rely on world class commercial processes as much as possible to save money; obtain a better product; and foster a more competitive industry." [Ref. 5]

C. THE CURRENT POLICY AND IMPLEMENTATION

1. Policy

There are four DoD policy statements that are particularly important to this research effort. They are: a) "Common Systems/ISO-9000/Expedited Block Changes" by Secretary of Defense Dr. William Perry, dated December 6, 1995; b) "Single Process Initiative" by Under Secretary of Defense for Acquisition and Technology Dr. Paul Kaminski dated December 8, 1995; c) "Prime and Subcontractor Relationships in the Single Process Initiative (SPI)" by Dr. Kaminiski dated September 3, 1996; and, d) "Subcontractor Single Process Initiative (SPI)" by Dr. Kaminiski dated May 16, 1997.

The significance of these memoranda is that they are all linked to one another by their authors in the effort to first announce, then clarify the Department's SPI policy. The first two memoranda outlined the essential tasks required by the Government and industry to utilize the SPI. This includes the role of the DCMC and its contract administrators, and

how prime contractors can participate in the SPI process. The latter two memoranda concentrate on subcontractor issues.

The following sections will highlight the key policy statements made in each of the memoranda.

(a) "Common Systems/ISO-9000/Expedited Block Changes" by Secretary of Defense Dr. William Perry, dated December 6, 1995

This memorandum by Secretary Perry is the cornerstone document for the SPI. Herein, Dr. Perry announces that his June 29, 1994 policy statement concerning the use of performance specifications to the maximum extent practicable is being amended to realize benefits from not just new procurements, but existing contracts. The Government must reduce the requirements under a single facility for multiple management and manufacturing systems designed to accomplish the same purpose. [Ref. 6:p. 1]

How to expedite this "new way of doing business" is by transforming a large number of military specifications and standards to those known as "industry-wide practices." [Ref. 6, p. 1] These industry practices are production methods which have been developed by a manufacturer or a group of manufacturers with the intention of maximizing efficiency and minimizing costs. In the DoD's attempt to take advantage of these potentially more effective processes, Secretary Perry makes the following policy statement:

> I now direct that block changes to the management and manufacturing requirements of existing contracts be made on a facility-wide basis, to unify management and manufacturing requirements within a facility, where ever such changes are technically acceptable to the government. The single point of contact for this effort will be the Administrative Contracting Officer (ACO) assigned to a facility. [Ref. 6:p. 1]

b). "Single Process Initiative" by Under Secretary of Defense for Acquisition and Technology, Dr. Paul Kaminski, dated December 8, 1995

This memorandum is intended to directly follow-on Dr. Perry's document discussed above. The objective of Dr. Kaminski's memorandum is to promulgate guidance for making block changes to existing contracts. This guidance consists of specific actions and responsibilities that must be taken by the Government and by contractors prior to any approved contract change.

Dr. Kaminski first indicates the need for a viable process. For SPI to work, there must be in place a process that encourages the teaming of contract administrators and contractors. The memorandum indicates that only an "expedited, streamlined approach" can ensure that the contractor's proposals are technically acceptable. Also, an efficient approach can "...quickly identify those cases where there may be a significant decrease in the cost or performance of existing contracts." [Ref. 7:p. 1]

The Under Secretary then tasks the Administrative Contracting Officers assigned to a facility. The ACOs "...are directed to encourage contractors to prepare and submit concept papers describing practices that will permit uniform, efficient facility-wide management and manufacturing systems and a method for moving such systems." [Ref. 7:p. 1]

The contractor recommendations should be accompanied by a cost-benefit analysis adequate to determine a rough order of magnitude of the costs and benefits to the contractor proposing the change. This cost-benefit analysis is to be done without

requesting cost or pricing data. Essentially, the detail required in these proposals shall be "...sufficient to allow an informed, rapid judgment by the ACO on whether proposed changes to management and manufacturing processes can be approved on a non-cost, block change basis..." [Ref. 7:p. 2]

If it has been determined that there are no significant net savings in the cost of performing existing contracts, the ACO will issue class modifications to those contracts without seeking an equitable adjustment. However, in those cases where the contractor's proposal will result in significant decreases in costs associated with an existing contract, the contractor should be asked to submit a proposal for an equitable adjustment (consideration) and separate cost data in support of the amount. [Ref. 7:p. 2]

The fourth key element of the memorandum clarifies the scope of cognizant ACOs at a contractor's facility. Dr. Kaminski states that, "...effective immediately, ACOs have the authority to execute class modifications, subject to receipt of necessary programmatic authorization from affected components." [Ref. 7:p. 2]

The final key policy statement made by Dr. Kaminski in his memorandum tasks the Commander, Defense Contract Management Command (DCMC). The Commander will be the focal point for implementing the SPI effort within the DoD and will facilitate the change process. Specifically, this means the institution of a DCMC Management Council whose primary role is to facilitate the receipt, evaluation, and acceptance of contractor concept papers. [Ref. 2:p. 6] This council will consist of senior representatives from the local DCMC office, the DCAA office, an SPI Component Team Leader from each Service and representatives from customer organizations that have

active contracts at the relevant facility. In addition, the Commander will establish and enforce the 120 day window required to process and decide upon the merits of the concept papers.

(c). "Prime and Subcontractor Relationships in the Single Process Initiative (SPI)" by Dr. Kaminski, dated September 3, 1996

This policy statement is intended to provide amplification of Dr. Perry's December 8, 1995 memorandum. Dr. Kaminski writes that there is a need for further guidance for dealing with specification and process changes for prime contractors who also act as subcontractors to other contractors. [Ref. 8:p. 1]

The process discussed in this memorandum is:

(1). Prime contractors are "encouraged" to identify in their concept papers candidate Government contracts for change implementation on which they are subcontractors.

(2). The Management Council receiving the concept papers on the identified contracts shall consult with the DoD program/project manager and the prime contractor of every affected contract during the technical review of the proposal. This review of the impact of these changes on both the subcontracts and prime contracts shall occur concurrently with the normal block change review.

(3). When the Management Council and the prime contractor to which a requester is a subcontractor agree on a change, the Administrative Contracting Officer may send the request for contract modification to the cognizant prime contractor ACO along with an assessment of cost or savings. Modification of the prime contract by the resident ACO should follow. If the Government contract does not require modification, the subcontractor will be advised to request the change from the prime contractor without further Government involvement.

(d). "Subcontractor Single Process Initiative (SPI)" by Dr. Kaminski dated May 16, 1997

In this memorandum, Dr. Kaminski wrote that his September 3, 1996 memorandum provided a "framework" for processing subcontractor SPI concept papers, but that further guidance was necessary. Specifically, the Secretary stated that:

> In order to assure our personnel are receptive to subcontractor SPI proposals, and to make the process a simple one to implement, the following procedures apply. To the extent that any prime contract processes that are flowed down or imposed on subcontractors, are inconsistent with SPI processes accepted by the Government for use at the subcontractor's facility, prime contractors may substitute the accepted subcontractor equivalent process. Management Councils at prime and subcontractor facilities should facilitate and enable substitution of accepted subcontractor SPI processes. [Ref. 9:p. 1]

The Secretary concluded his memorandum by stating that additional concept papers are not required because the performance of the end items remains unchanged. If modifications are necessary to prime contracts because of the authorized procedure noted above, the Government will provide assistance. But it is also noted that only prime contractors can make changes to subcontracts.

2. Implementation

As indicated by Dr. Kaminski's memorandum of December 8, 1995, the responsibility for implementation of the SPI policy falls on members of the Defense Contract Management Command (DCMC). They are the lead facilitators to the contractor in the institution of plant-wide changes. As an attachment to Dr. Kaminski's memorandum, there is general guidance provided on the block change

process, proposal development, approval process and the roles and responsibilities of the cognizant personnel involved in the SPI effort.

The block change process "...is built on existing structures within the components and OSD [Office of the Secretary of Defense] and is designed to create a sense of urgency in the approval process for the streamlining of specifications, standards or other processes." [Ref. 10]

Proposal development means that industry can submit concept papers that detail the streamlining of specifications and standards, then work with DCMC personnel to ensure that the ideas would be acceptable to Service customers. Once the costs and benefits of the change are determined through this teaming effort, industry can then submit block change proposals. These proposals should detail "...the proposed processes and associated metrics, rough order of magnitude cost-benefit analysis, the consequent changes in government's involvement in the process and required regulatory/contractual changes." [Ref. 7]

The approval process is a fundamental responsibility of the Contract Administration Office (CAO). The CAO will determine the contractual/regulatory scope of the change, confirm the customer base impacted and may organize a local management council based on the nature of the proposal.

As Dr. Kaminski's memorandum indicates, the role of the management council is to "...analyze the merits and cost benefits of the change." What is critical to this process is that subject matter experts from the customer base are involved in the approval process. To minimize delay, the Component Acquisition

Executive (CAE) should designate a component team leader who has decision making authority to speak on behalf of the key customer base. The component team leaders need to achieve consensus with other component team leaders, PCOs and PMs, DCAA representatives, component team members and the CAE. The CAO is responsible for facilitating the management council. Once agreement is reached, the ACO has the authority to execute all block changes.

There are two issues not fully discussed in the attachment to Dr. Kaminski's memorandum that impact the SPI process. The first is the idea of equitable adjustments to be made if substantial savings are anticipated from the changes. The second issue is the mandatory reporting requirements of SPI progress by DCMC personnel.

According to the Single Process Initiative "Four Step Process" section of the *DCMC Homepage*, equitable adjustments will be determined after the execution of the block changes. In the case of a cost-reimbursable contract, savings will be passed on to the Government directly. For fixed-price contracts, there is no mechanism in place for the Government to directly benefit from reduced costs other than expecting the contractor to provide consideration "...either non-monetarily or as adjustments to the contract prices." [Ref. 10]

The issue of reporting requirements are discussed in the *Single Process Initiative System (SPIS) User's Manual* and the *DCMC Homepage* cited above. The former source indicates a continuous dialogue between the contract administrators and the DCMC during the SPI process:

> In accordance with DCMC Policy (the One Book, DLAD 5000.4), the Contract Administration Office (CAO), with District coordination, shall manage the Single Process Initiative, implementing all four process phases and reporting progress weekly to DCMC headquarters. [Ref. 11:p. 1]

The latter source stipulates that "The CAO will submit their final report to the Headquarters DCMC SPI Team describing the benefits and lessons learned from implementing the change." [Ref. 10]

D. THE PROJECTED BENEFITS OF THE SPI

From the Government's perspective, the literature indicates that the SPI should save the DoD money, promote other aspects of acquisition reform and encourage the industrial base. In his amplification of Dr. Perry's announcement of the SPI in 1995, Dr. Kaminski asserted that the greatest projected benefit for the Government is the potential to save "hundreds of millions of dollars" starting in 1997. [Ref. 12]

However, for money to be saved, acquisition reform across the board must be successful. The SPI is an integral part of acquisition reform effort because it supports the DoD's quest for overall specifications and standards reform. As the Army SPI Guidebook asserts,

> The benefits of specs and standards reform will not be fully realized unless action is taken to address the hundreds of existing contracts which still include provisions for compliance with military specs and standards, often with multiple, burdensome requirements for similar processes at each contractor facility. [Ref. 2:p. 2]

Dr. Kaminski is also quoted as saying that the Government is hopeful that the SPI will energize weapon system manufacturers. As reported in an article published in *Government Executive* magazine in April 1996:

> If we can consolidate to one or two major specifications, manufacturing personnel can become more efficient, the inspection requirements and the paperwork can be reduced, and we can, where possible, leverage off the commercial process. [Ref. 13]

From the commercial perspective, articles published soon after the SPI became policy included analysts estimating the profit potential of the initiative and top executives relishing anticipated cost savings.

Regarding profit, Jim McAleese, president of McAleese and Associates, a law firm that specializes in procurement issues, stated that,

> In its truest essence, this [the block change provisions of the SPI] translates into bottom line improvement of 3-4% additional pure profit for electronic houses in 1996 and 2% or more for manufacturers of hardware end items. [Ref. 14:p. 106]

Savings will come from "cutting the fat." Top defense executives say that the "...effort to free existing contracts of burdensome military-unique specifications will result in leaner and more competitive companies." [Ref. 12] More clearly, Nick Kuzemka of Lockheed Martin finds that "...the biggest savings to the Government will be in reduced overhead costs, once contractor facilities have moved to common practices." [Ref. 13]

E. EXAMPLES OF HOW CONTRACTORS ARE IMPLEMENTING THE SPI

In his May 1, 1997 testimony before the United States Senate Governmental Affairs committee, the Principal Under Secretary of Defense for Acquisition and Technology, Mr. R. Noel Longuemare stated that the rewards of SPI were already pouring in and more would follow:

> Since the initiative started, over 160 contractors have proposed nearly 800 process changes. To date, we have already modified almost 400 processes. Reported savings and cost avoidance to DoD programs on a recurring basis is $40 million combined: $6.5 million in savings and $34 million in annual cost avoidance. [Ref. 4]

How the Government came to these figures is not part of the Under Secretary's testimony, but press releases and congressional testimony related to the SPI may shed light on how the Government came to its conclusions.

The literature suggests that the primary way that companies have been able to reduce costs and save the Government money is by proposing block changes in areas where redundancy and overhead costs could be reduced.

A sizable number of defense manufacturers have submitted block change requests, and noteworthy examples of process improvements come from congressional testimony and company press releases.

In his March 19, 1997 statement before the Acquisition and Technology Subcommittee of the U. S. Senate Committee on Armed Services, Dr. Kaminski provided an example of how the SPI has increased manufacturing efficiency and resulted in savings for the Government. The first block modification made under the SPI targeted the product

assembly process at Texas Instruments Defense Systems and Electronics. Before the SPI, the assembly process was controlled by at least 65 variations on 38 defense specifications. With the approved block change, these numbers have been reduced to eight specifications and standards. And these eight are considered to be "...performance based, commonly accepted commercial specifications and standards." [Ref. 15]

An example of a reduction of overhead costs comes from Lockheed Martin. An August 1997 press release by the company describes how the Tactical Aircraft Systems division was able to present a check for $1.6 million to the Government as a result of the SPI. [Ref. 16] The press release attributed the savings to streamlining within its parts control program. Prior to the SPI, Lockheed Martin was required to request Government approval of all piece parts in accordance with the military's parts control program. Each non-military or non-industry standard part had to be documented on specification control drawings and submitted to the Government for approval. With SPI, the company is left to approve its own parts and redefine the documentation requirements. This improvement is expected to reduce documentation requirements as much as 80 percent and save on overhead costs.

F. CONCERNS OF SUBCONTRACTORS

The research found a small number of articles that dealt with problems of the SPI. However, those articles that did mention problems noted that aerospace subcontractors and suppliers in particular faced unexpected inequities when their primes implemented block changes. The fundamental issue with the

subcontractors is that not all prime contractors use the same standards. This could, for example, lead a subcontractor to Boeing Co. and Northrop Grumman to have to conform to two different lines [Ref. 17] Another issue is a lack of commitment by the Services to accept previously approved SPI driven changes in new procurements.

Regarding the issue of different commercial standards for similar work done by a subcontractor, William Wheeler, company president of Dowty Aerospace, Yakima, Washington, states that he has faced an administrative and cost burden directly attributable to the SPI [Ref. 17] Wheeler makes identical actuators for the F-16 and F/A-18 jet fighters. Even though there is no difference between the two items, workers putting them together have to follow two different instruction manuals prepared by the engineers of the two primes. This has caused wasted time and increased overhead costs because of the need to have parallel training and process inspections for the same product.

Another example comes from new audit requirements. For EG&G Aerospace and Engineered Products, the worst aspect of the SPI is that this company is required to perform separate audits of the same processes for different customers. According to the general manager of the company, "That represents a lot of wasted time and effort that could go toward improving processes and reducing costs." [Ref. 18] The irony of this situation is that according to another article dealing with the subject of redundant audits, Pentagon Inspector General Eleanor Hill over two years ago agreed to limit redundant

audits by different DoD agencies. Yet, prime contractors have not yet made similar pledges to their suppliers. [Ref. 17]

The pressures of subcontractors having to abide by the audit and quality assurance requirements of primes is significant according to William Lewandowski of the Aerospace Industries Association. A form of influence that primes exercise over their subs is a rating system:

> Prime contractors rate their subcontractors differently—meaning the same supplier can get praised by one and panned by another—while enduring a steady stream through their factories of auditors and quality assurance inspectors, each wearing a different company's lapel pin. [Ref. 17]

The unfortunate consequence of the rating system and multiple requirements is that prime contractors are "...forcing their subcontractors into contortions in areas other than manufacturing processes." [Ref. 17] If the subcontractors refuse to comply with the prime's new requirements, those subs will not survive.

A final problem associated with the duplicity of requirements concerns software modernization. As the aerospace industry continues to be more computerized in their supply systems, there is a danger that subcontractors would have to adopt and maintain several different systems just to keep linked to their major primes. Again, costs associated with this include training and administrative overhead. In addition, there could be direct costs involved because of the need to acquire increasingly more complex computer networks that can handle the array of software.

The issue of Services effectively "backsliding" on SPI is raised by the Aerospace Industries Association (AIA). Despite the high-level DoD promotion of

the SPI, the AIA reports that in several cases, the Military Services are reverting to pre-acquisition reform methods in their solicitations and imposing military specifications and standards that have, in many cases, already been canceled. This situation has caused additional problems for subcontractors who have been trying to keep up with prime contractor's required changes as a result of the SPI.

According to the AIA:

> ...the services are continuing to impose MIL-SPECS and standards because they don't know how to accept SPIs in their place. In fact, DoD has considered some companies proposing SPIs as non-responsive to solicitations. [Ref. 19]

G. ACKNOWLEDGMENT OF THE PROBLEMS AND PROPOSED RESOLUTIONS

The literature suggests that the concerns of the subcontractors expressed are legitimate. Both high level Department of Defense officials and members of industry acknowledge that improvements could and should be made to the SPI so that subcontractors would see opportunities rather than problems. However, the literature also shows that these improvements are still at an early stage in implementation. The following discussion will concentrate on how the problems of subcontractors have been interpreted by concerned groups in and out of Government, and how one advocacy group is attempting to provide some relief for aerospace subcontractors.

During a March 19, 1997 DoD press conference held to kick off Acquisition Reform Week, Dr. Kaminski outlined the inroads being made to improve the defense procurement process. One of the noteworthy success stories was the SPI. Aside from

detailing the positive aspects of this initiative, the Under Secretary also briefly mentioned an area of concern:

> At the prime contractor level we've discovered now the next opportunity to push this down to the subcontractor level as well, especially since 50 percent of our value-added or more comes from our subcontractor base. I would now give us good marks on what we're doing at the prime contractor level, but I think we're really just beginning our work pushing this down to the supporting tiers. [Ref. 20]

The Under Secretary failed to provide more detail regarding the issue of subcontractors during this meeting with the press. It was actually two weeks later that a more pointed discussion occurred.

The SPI and subcontractors was one of the key topics at a March 31, 1997 round table on acquisition reform that featured Dr. Paul Kaminski and other top-level DoD officials as Principal Deputy Under Secretary R. Noel Longuemare, Assistant Secretary for Research Gilbert Decker and Assistant Secretary for Acquisition Arthur Money.

An audience member directed the following question to Mr. Longuemare:

> So what are you doing to address some of the, say, inefficiencies that maybe are taking place at the subcontractor level? Or is this something that you need to leave up to the prime contractors to take on. [Ref. 21]

Mr. Longuemare responded to this question by stating that the subcontractor problem came to light with companies who function as both prime and subcontractors. What these industries were finding was that when they initiated reforms as a prime contractor, they found that as a subcontractor, "...they had difficulty applying that to other primes who weren't quite so far along." [Ref. 21]

As far as a solution to this problem, Mr. Longuemare stated that the Department is "still working," but that the best means to a resolution is by Government and contractors working together. [Ref. 21] Both groups should get the word out to subcontractors that they must have a process that is acceptable to the prime contractors involved with the SPI.

Dr. Kaminski offered the following comment to the above question:

> In our work with the prime contractors on the single process initiative, I would now give us a B or maybe even a B plus in how we're doing on that. In our work in passing this down to the supporting subcontracting tiers, maybe a D is even a kind grade right now, in terms of where we are in really implementing it. [Ref. 21]

Dr. Kaminski then went on to say that what has been a surprise is the difficulty subcontractors have had in applying their best practices. This is not because people are reluctant, but that subcontractors are getting particular processes imposed upon them. Dr. Kaminski then mentioned that one possible way to deal with this problem was by allowing subcontractors to use previously approved processes when they are faced with a contractor who requires work to be done as per the original contract. To make this policy enforceable, it would take a waiver not to use the approved process. [Ref. 21] This idea became policy with Dr. Kaminski's memorandum of May 16, 1997, discussed earlier in this chapter.

A follow-on question posed by another audience member directed the conversation toward the use of the SPI by the aerospace industry. To paraphrase, if a subcontractor were to do work for Lockheed Martin, Boeing and Texas Instruments, and all of the companies are using their own standards under the SPI, wouldn't the subcontractor run into problems dealing with the different Services? All participants agreed that this is an

area of concern. Mr. Decker, Assistant Secretary of the Army for Research, Development and Acquisition responded: "That is a dilemma, and it requires work. Getting the three of them to accept an acceptable process for me as a standard is not easy, but it's not rocket science" [Ref. 21]

A further response to this problem was offered by Mr. Money. He stated that there are signs that the aerospace industry has attempted to resolve the issue of multiple Service requirements. An example can be found in the area of purchasing. Each of the aerospace primes have their own international electronic commerce approach. It had become untenable for a subcontractor to support each of the primes when each is operating with different software. Mr. Money concluded that "They have come together, and they are coming up now with a common approach that everybody will sign up to.... They recognized the problem; they're working it out themselves." [Ref. 21]

Regarding the defense industry's interpretation of the problems faced by subcontractors, one example comes from the benchmark study on the entire acquisition reform movement conducted by Coopers & Lybrand L.L.P. during the period of April to September 1997. On SPI, the study found that:

> In general, industry is very supportive of SPI. They want the government to continue to emphasize the need for increasing its effectiveness at the subcontractor level. They feel there has been a tendency to pick-off the "low hanging fruit" and they want more substantive change to be addressed in the future. They feel the focus should be on long-term savings, not instant savings. [Ref. 22]

Another example of recognition by contractors of the subcontractor issue comes from an article quoting James Stinnett, McDonnell Douglas's senior vice president for advanced systems and technology. When asked about whether block changes being made

by subcontractors would be accepted by prime contractors, Stinnett noted his company's compliance with the September 3, 1996 Memorandum authored by Secretary Kaminiski. As discussed earlier in this chapter, this memorandum set up a process by which approval for block changes suggested by the subcontractors would be made by not only DCMC, but also from the prime contractors. According to Stinnett, "if the primes do not flow their changes down to the sub—who account for 70 percent of McDonnell Douglas's business—then shame on us." [Ref. 12]

Actual remedies to the downside of the SPI are uncommon in the body of literature researched. From the Government's perspective, privity of contract prevents it from requiring the prime contractor to assist their subcontractors when problems associated with SPI changes flare up. According to Paula Metcalf of the DCMC SPI Team, the Government is limited to the role of "facilitator." This means that:

> ...we [DCMC] inform contractors that subcontractor participation is desirable and we encourage it, emphasizing that the prime is still responsible to assure that its subcontractors meet the prime contractor's requirements." [Ref. 23]

Who can assist subcontractors is advocacy groups like the AIA. In an article posted to the organization's web-page, AIA announced that the goal of the organization is to "support AIA member companies in their responsibility to flowdown the benefits of SPI to the supplier base." [Ref. 24] This support will be in the form of a Supplier Management Council (SMC) which will determine "...efficient implementation of consistent business practices, including participation of the supplier base in SPI." [Ref. 24]

H. CHAPTER SUMMARY

As determined by the research, the SPI was first brought to public attention over two years ago by Secretary of Defense William Perry. According to his December 6, 1995 memorandum, in order to maintain the momentum of acquisition reform, there is a need for the Government to push specifications and standards reform beyond the narrow focus of new procurements. Cost savings by the Government could be achieved in existing contracts if contractors were allowed to substitute commercial practices for military specifications and standards.

Following closely after Dr. Perry's introduction of the SPI, top level DoD officials publicly announced the goals of the measure and promoted its implementation by issuing policy memoranda. As the months and eventually years passed, the initiative was embraced by a wide range of defense contractors. The literature shows that SPI became the subject of praise by many who choose to adopt its provisions.

However, the literature also reveals criticism about the SPI. Subcontractors, especially in the aerospace industry, have voiced regret over this "new way of doing business," and have experienced rising costs and reduced efficiency. Fortunately, the literature also provides examples of how problems associated with the SPI have been addressed by Government officials and advocacy groups in the effort to rectify the initiative's unintended consequences.

III METHODOLOGY

This chapter will discuss the data collection methods used to answer the research questions. The first method, as discussed in detail in the previous chapter, is a review of pertinent literature concerning the SPI and its affect on aerospace subcontractors. This chapter will provide a brief commentary about the literature search method and how the literature is an important part of the interview process. The second method is the development of a questionnaire and the engagement of industry spokespersons through telephone interviews. It will be revealed how a representative calling list was developed and how the questionnaire was constructed.

A. LITERATURE

The literature discussed in the previous chapter addressed the primary research question and the first two subsidiary research questions of this thesis. The material was acquired largely through electronic means. The reason is that the SPI is a relatively new concept that has experienced some evolution since its inception. Thus, a determination was made that the most current information would be found through *Lexus/Nexus*, internet web-pages and the March 31, 1997 edition of the *Defense Acquisition Deskbook*.

A search in *Lexus/Nexus* of the past two years revealed 93 articles, testimony and press releases that dealt with the SPI. While the vast majority of the documents provided relevant insight into the SPI, a significant number were redundant in what they revealed. For example, 14 congressional testimonies and DoD press conferences were examined and it was found that opinions expressed by officials were nearly identical regardless of

different dates or different Congressional committees. More valuable information often came from the press conferences where questioners prodded DoD spokesman to come away from crafted, official opinions and provide some fresh answers.

News articles and press releases were valuable in providing examples of pros and cons regarding the SPI. Obviously, press releases from major contractors concentrated on how effective the initiative was in their respective facilities. But articles published in defense related journals were split evenly between applauding the SPI and unearthing its deficiencies.

Three web-pages provided helpful background information about the SPI. These were the *DCMC Homepage*, *Acquisition Reform Homepage* and *the Aerospace Industries Association Homepage*. The importance of these web pages to the research effort was in detailing the processes involved in the implementation of the SPI and commentary about the implementation from Government and civilian sources. In addition, the DCMC web page provided a list of all contractors and subcontractors who have participated in the SPI process.

A final note about the literature review is that the information garnered helped in the development of the interview questions. The questions asked were largely formulated out of the goals, objectives and problems of the SPI as related in the previous chapter. What truly makes this research effort an interesting challenge is comparing what has been written about the SPI to the independent assessments of people who have actually had to implement the policy.

B. QUESTIONNAIRE

The first step in the questionnaire process was the determination of a target audience. Once this was determined, the second step was to develop questions that could be accurately answered by the target audience and address the primary and second through fifth subsidiary research questions. The third step was collecting contractor and subcontractor points of contact. The final step was conducting in-depth interviews with representatives of the targeted firms.

1. Step One: The Target Audience

The researcher considered the fact that the bulk of the research questions focus on how the SPI has actually been implemented and the perceived effects of that implementation on a firm. Thus, it was reasoned that the best spokespersons would be those employees who have participated in the SPI process from an active managerial position. More clearly, the people targeted were those who were part of the management council, company SPI team or were responsible for managing the formulation of proposals. Examples of these types of employees are Government contract managers, quality assurance managers, process developers and engineering managers. It was concluded after a couple of interviews with very senior executives of companies that these executives were not actively involved in the day-to-day workings of the SPI and could only provide a cursory opinion about the initiative. Low level managers or workers who came to understand the process only after it had been implemented were not adequate as

well. These individuals lacked knowledge of why the company chose to implement the SPI or how the SPI would affect the company overall.

The size of the target audience was determined by reviewing the DCMC's list of contractors and subcontractors who have participated in the SPI. This list included 260 companies, the DCMC personnel assigned to each company and their major customers. As this research effort is only concerned with aerospace firms, the number of companies falling into this criterion was reduced to approximately 90. This number was determined by looking at the major customers of each individual contractor. For example, if a contractor had as a major customer the Naval Air Systems Command, commonly referred to as NAVAIR, then this contractor was targeted. Similar inclusions of contractors were made if they worked for Air Force or Army aviation commands.

Whether the listed contractor functioned as a subcontractor or contractor was determined during the interview process. Given the relatively small number of potential contacts, it was decided that an attempt would be made to contact each one. A successful sample of this population would be at least 30% of the subs and primes possible. Finally, the goal was to question an equal number of subcontractors and contractors so that their responses could be compared to each other.

Regarding the heavy influence the DCMC list of contractors played in this research effort, it was determined that these companies would have the most experience in dealing with all aspects of the SPI. These companies would have SPI teams or specific individuals assigned to coordinate proposals. Also, in many cases, they had the resources to analyze the relative worth of the SPI block changes and provide the researcher with relevant data.

An attempt was made to solicit points of contact from the Aerospace Industries Association, but the names provided were already included on the DCMC's list. Also, it was determined that names of subcontractors would not be collected by calling prime contractors and asking them who their subcontractors were. It was felt that this could reduce candor on the part of the sub interviewee who may feel pressured to respond in a way that was "politically correct" from the standpoint of the prime.

2. Step Two: Development of Interview Questions

The prime contractors and subcontractors were asked similar types of questions that were designed to play off each other. Thus, two surveys were actually used. The structure of the questions was mostly multiple choice with options to include additional comments and a final, opinion-based question. The strategy behind this question development was to expeditiously collect opinions from very busy contractor representatives while allowing them to either agree or disagree with issues raised in the literature review. Also, the interviewees had the opportunity to provide the researcher opinions as to how to improve the SPI process. As a final note, the researcher told each interviewee that all responses would be recorded on a non-attribution basis. This approach encouraged candid responses. The following is an identification of both sets of questions and the corresponding intent of the questions:

(1). Question One (both surveys): Has the Single Process Initiative (SPI) affected your work as a contractor/subcontractor....Answers: a) Very positively; b) Positively; c) Marginally; d) Poorly; e) No effect.
Intent: This is a "ground-breaker" question that is designed to give the interviewee a starting point to discuss more detail about the SPI. In the data analysis phase of this research effort, what will be considered is the number

of contractors who have a positive or negative opinion about the SPI as compared to the opinions of the subcontractors. This will show whether the surveyed population is fragmented or unified.

(2). Question Two (both surveys): How is your company implementing SPI? Answers: a) Concentrating SPI changes in one area of business; b) Applying SPI changes in all areas of business; c) Proposing a target number of SPI driven changes; d) Instituting an SPI Team; e) Other, please explain. Intent: The objective here is to answer subsidiary research question two. This question will help determine the maturity of the SPI program in the targeted plant and expose the interest the company has in the SPI. In the data analysis section, we may see how much effort the respondents who answered question number one positively or negatively have put into the SPI.

(3). Question Three (Prime): As a prime contractor, are you aware of any problems that your subcontractors are having implementing the SPI? Answers: a) Yes—Please explain what the problems are; b) No
Intent: This question will help answer subsidiary research questions two and three. It does so by testing the knowledge of the interviewee of events occurring outside the confines of his or her company. If problems are acknowledged, then we can see how the company is responding to the concerns of subcontractors. If "no" is answered, then obviously there are no significant problems or the prime contractors is simply not aware of any.

(4). Question Three (Subcontractor): As a subcontractor, are you having any problems implementing the SPI? Answers: a) Yes (go to the next question); b) no (go to question 5).
Intent: This is a turning point question which attempts to answer subsidiary research question three. If the answer is to the affirmative, then question four will provide potential problems based upon the literature. If there are no acknowledged problems, then the interviewee can assess the success of the SPI in question five. Also, a comparison can be made with question three of the contractor survey.

(5). Question Four (Prime): As a prime contractor, are you flowing down the provisions of the SPI to the subcontractor? Answers: a) Yes (go to the next question); b) No (go to question 5).
Intent: This question addresses subsidiary research question two. The literature suggested that the flow-down of provisions to the subcontractor level caused some problems for the affected subs. This question leads the interviewee towards an identification of the relationship they have with their subcontractors with regard to SPI implementation. In addition, as question

three was for the subcontractor, this is a turning point question for the prime contractor. If the answer is to the affirmative, then the researcher will have the opportunity to examine how the flow-down process used by the contractor deals with some of the problems expressed by subcontractors in the literature. If the answer is to the negative, then the respondent may then assess the success of the SPI in question five.

(6). Question Five (Prime): How are you flowing down the provisions to your subcontractors? Answers: a) Including the subcontractors when making decisions regarding block changes; b) Reducing redundant/parallel administrative controls for the subcontractor; c) Assisting subcontractors with burdensome startup costs in order to meet commercial specifications; d) Allowing protests or unilateral block changes by the subcontractor; e) Other, please explain.
Intent: The possible answers to this question come from the literature review and the intent here is to answer subsidiary question two. The idea here is to give the interviewee an opportunity to address the relevance of the issues raised by the subcontractors quoted in press reports. Also, the researcher may determine if there is a positive working relationship between major primes and their subs with regard to the development of concept papers and implementation of SPI approved proposals. Analysis of this question may determine if there is a need to be concerned about the current SPI policy and whether there should be changes made to encourage greater congruence within the aerospace industry.

(7). Question Four (Subcontractor): What specific problems are you having implementing SPI? Answers: a) Not being included by the prime contractors when block change decisions are made; b) Facing redundant/parallel administrative controls; c) Facing burdensome startup costs in order to meet commercial specifications; d) Not being allowed to protest or make unilateral block changes; e) Other, please explain.
Intent: This question counters the prime contractor's question number five and provides insight so that subsidiary research questions three and four can be answered. It would be important to see if the subcontractor problems acknowledged by the primes are those actually being experienced by their subcontractors. Also, this question attempts to reveal the subcontractors' agreement with the problems expressed in the literature and gives them an opportunity to add any unique difficulties they have faced.

(8). Question Five (Subcontractor) and Question Six (Prime): The literature states that the SPI was designed to meet specific goals. Please rate how you perceive the success rate of these goals. Subcategories: a). Promote

the reduction of MILSPECS; b). Increased compatibility between military and commercial standards; c). Increased profits and/or reduced costs; d). Increased manufacturing efficiency; e). Reduced impediments to technological innovation. Potential answers for each: Highly Successful, Successful, No Impact, Unsuccessful, and Highly Unsuccessful.
Intent: This question is again tied to the literature and will assist the researcher in answering the primary research question and subsidiary research question five. The respondent is prompted to decide which SPI related goals are successful and which need work, or which may be simply unrealistic hopes established by the Government. The determination of the overall effectiveness of the SPI is important to consider. If respondents have expressed some difficulty with the SPI as determined by earlier questions, they may determine here which specific goals are not being met. This can give SPI policy makers some indication as to where to concentrate their improvement efforts. Thinking a bit more positively, if goals are said to be met successfully by the interviewees, then the Government can find some encouragement in a new process that appears to be meeting it's expected outcomes.

(9). Question Six (Subcontractor) and Question Seven (Prime): If there are differences of opinion between prime contractors and subcontractors regarding the implementation of the SPI, should.... Answers: a). The Government through DCMC get involved and help resolve the problems; b). Industry should be left alone to resolve any disputes; c). Other, please explain.
Intent: This question is directed toward answering subsidiary research question five. The literature reveals that the central barrier between the Government getting involved in the business of subcontractors is the privity of contract rule. What may be revealed by the answer to this question is whether there is at least some role that the Government can safely play that is constructive while not improperly intrusive. This question would also be important to the development of the recommendations section of this thesis.

(10). Question Seven (Subcontractor) and Question Eight (Prime): How would you improve the SPI process? Answer: This is left up to the respondent to fill in the blank.
Intent: This question provides qualitative data necessary to answer the primary research question, subsidiary research question five and develop the recommendations section. The question gives the interviewee the opportunity to assess subjectively the primary road-blocks to SPI implementation and gives them a forum to voice ideas that may prove useful in correcting deficiencies.

3. Step Three: Collecting Contractor and Subcontractor Points of Contact

Once the determination was made as to who comprised the target audience, it was critical that the researcher locate those individuals in a timely and efficient manner. It was determined that the best way to achieve this was by first contacting the SPI point of contact at the DCMC offices located at or near the contractor or subcontractor facilities. These Government employees, usually ACOs, would be able to tell the researcher whether the firm listed on the DCMC home page list was actively participating in the SPI program and who was the company's main point of contact. After this evolution was completed, the researcher was able to determine a viable target audience of SPI contacts who could speak on behalf of their companies.

4. Step Four: Interviews with Representatives of Targeted Firms

The actual interview process was relatively simple once a representative could be reached. The researcher introduced himself, asked if a series of questions could be asked about the SPI and read through the questionnaire, filling in a sheet for each contact and taking notes as the representative spoke. Often, the researcher asked the interviewee for additional clarification on a point made, but the interviewee was not prompted for particular responses.

C. CHAPTER SUMMARY

This chapter discusses the methodology used to answer the research questions of this thesis. These questions were answered in two ways: 1) through a review of the literature pertaining to the SPI and, 2) through the development of an interview

questionnaire and subsequent interviews with representatives from a sample population of aerospace firms that have participated in the SPI process. As was discussed in more detail in the preceding chapter, the literature review played a large part in understanding the SPI. In this chapter, it was revealed how the literature was acquired and how it helped the interview process. This process was also discussed in detail, to include the identification of a target audience, the development of survey questions, the collection of aerospace points of contact and conduct during the actual interviews. The following chapter provides a presentation of the data collected from the targeted groups.

IV. DATA PRESENTATION

This chapter will present the data collected from the interviews in three formats: (a) the exact numeric responses for each potential answer, (b) a graphic representation of the percentages of those responses, and (c) any anecdotal data noted during the interview. Some questions did not have any associated quantitative data and therefore only anecdotal data are provided. The responses to the contractor version of the questionnaire will be presented first, followed by the results of the subcontractor version.

A. DATA FROM THE CONTRACTOR QUESTIONNAIRE

1. Contractor Question 1 and Responses

Has the Single Process Initiative (SPI) affected your work as a prime contractor?:

	Numeric Responses
a) Very positively	2
b) Positively	16
c) Marginally	3
d) Poorly	1
e) No effect	0

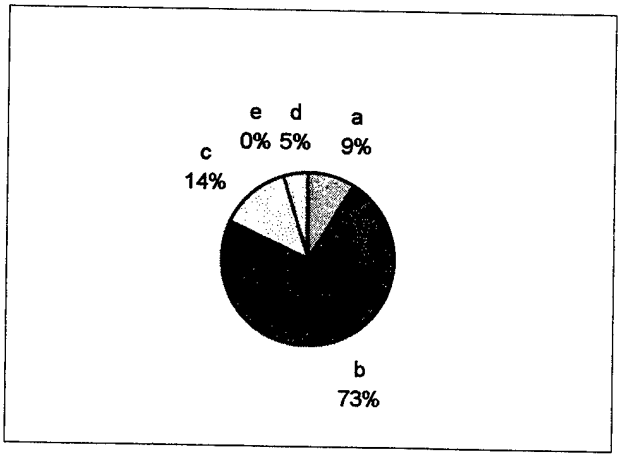

Figure 1. Contractor Responses to Question 1

Verbal Responses to Contractor Question 1

1. We like the SPI because it reduces the cost of common end items. We no longer have to abide by an old Mil Standard that requires that we buy a product which could be purchased less expensively on the open market.

2. SPI has been good because it has reduced overhead by cutting down on people who had to report procedures specifically for Government compliance. But the down side is that we have been waiting a year and a half on a SPI that was geared toward changing packaging requirements.

3. SPI is very applicable for high volume types of companies. It is really not for companies that produce large end items.

2. Contractor Question 2 and Responses

How is your company implementing SPI? (please circle all that apply):

		Numeric Responses
a)	Concentrating SPI changes in one area of business	2
b)	Applying SPI changes in all areas of business	17
c)	Proposing a target number of SPI driven changes	3
d)	Instituting an SPI Team	10
e)	Other, please explain (ad hoc teams only)	6

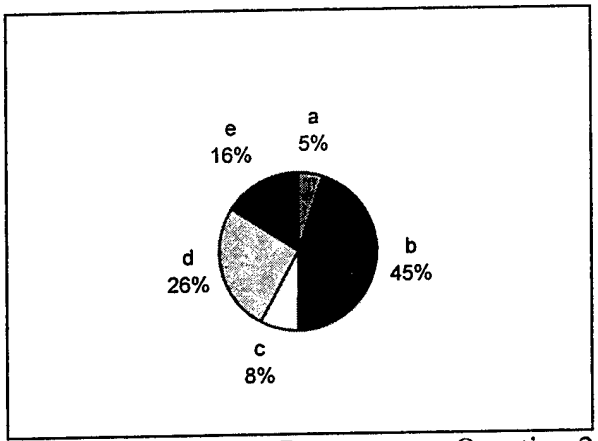

Figure 2. Contractor Responses to Question 2

3. Contractor Question 3 and Responses

As a prime contractor, are you aware of any problems that your subcontractors are having implementing the SPI?:

	Numeric Responses
a) Yes	2
b) No	20

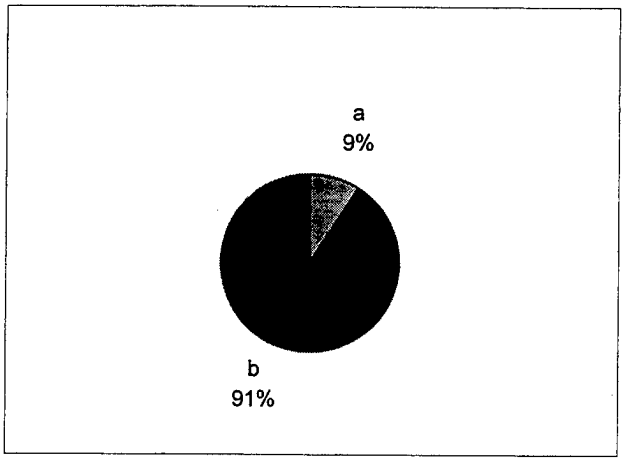

Figure 3. Contractor Responses to Question 3

Verbal Responses to Contractor Question 3

1. We want to address SPI as a company and not as a single site. We are working on an infrastructure that would tie all business units together in implementing SPI changes. What is a good SPI for one should be a good SPI for the entire company. This will benefit the subs.

2. The subs may provide the same product or service to different primes, so they have to go both ways. They have to potentially comply with various requirements and this could be difficult for them.

3. There are complications in the fact that subs may have many primes. We should be flowing down our processes, but it becomes confusing—we have tried to take steps to improve this, but we are still working on it.

4. Contractor Question 4 and Responses

As a prime contractor, are you flowing down the provisions of the SPI to the subcontractor level?:

	Numeric Responses
a) Yes (go to the next question)	15
b) No (go to question 6)	7

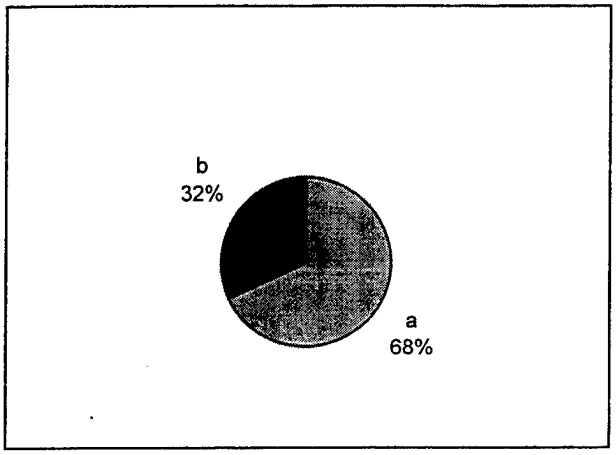

Figure 4. Contractor Responses to Question 4

5. Contractor Question 5 and Responses

How are you flowing down the provisions to your subcontractors?:

	Numeric Responses
a) Including the subcontractors when making decisions regarding block changes	10
b) Reducing redundant/parallel administrative controls for the subcontractor	8
c) Assisting subcontractors with burdensome startup costs in order to meet commercial specifications	1
d) Allowing protests or unilateral block changes by the subcontractor	4
e) Other, please explain	2

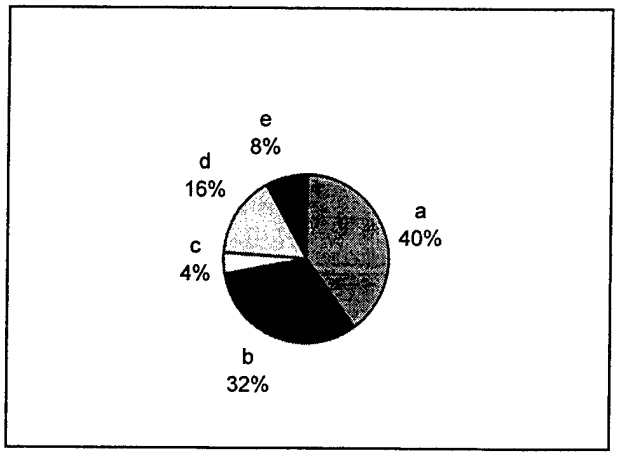

Figure 5. Contractor Responses to Question 5

Verbal Responses to Contractor Question 5

1. 5a. If the subs have a good QA system, we will look at it. They can flow up changes to us.

2. We have allowed subs to participate in the block change process, but not many have wanted to.

3. 5b. We can't control administrative problems, so we do not see this as a priority. This is a very complicated issue that the subs will have to work out.

4. 5d. One problem is subs putting out a change that is contrary to the needs of the prime. So we allow the subs to make their own block changes on a case by case basis.

6. Contractor Question 6 and Responses

The literature states that the SPI was designed to meet specific goals; please rate how you perceive the success rate of these goals:

a) Helping in the reduction of MILSPECS
b) Increase compatibility b/t military & commercial standards
c) Increased profits/Reduce costs
d) Increased manufacturing efficiency
e) Reduced impediments to technological innovation

Categories:		Numeric Responses				
		6a.	6b.	6c.	6d.	6e.
1. Highly successful	(HS)	9	6	1	3	0
2. Successful	(S)	11	14	7	12	5
3. No impact	(NI)	2	1	13	8	17
4. Unsuccessful	(U)	0	1	1	0	0
5. Highly unsuccessful	(HU)	0	0	0	0	0

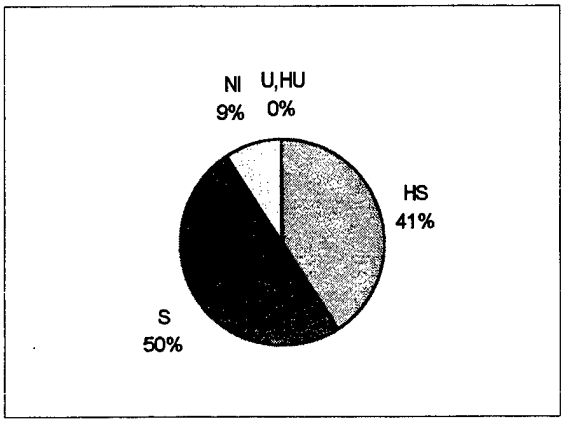

Figure 6a. Contractor Responses to Question 6a.

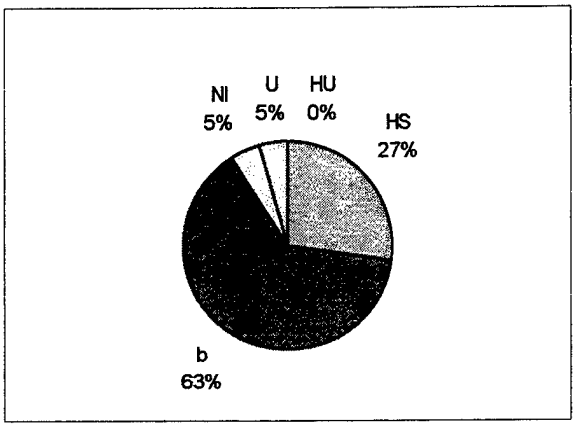

Figure 6b. Contractor Responses to Question 6b

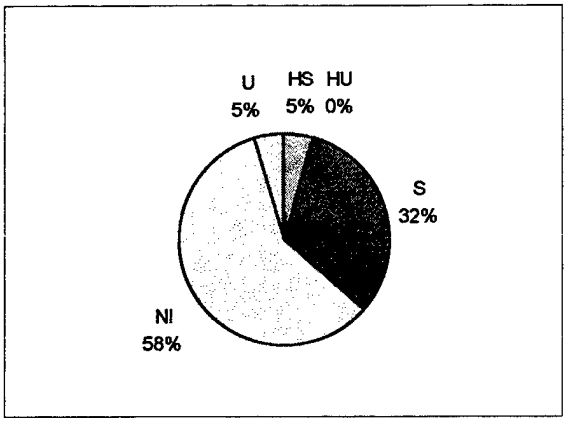

Figure 6c. Contractor Responses to Question 6c

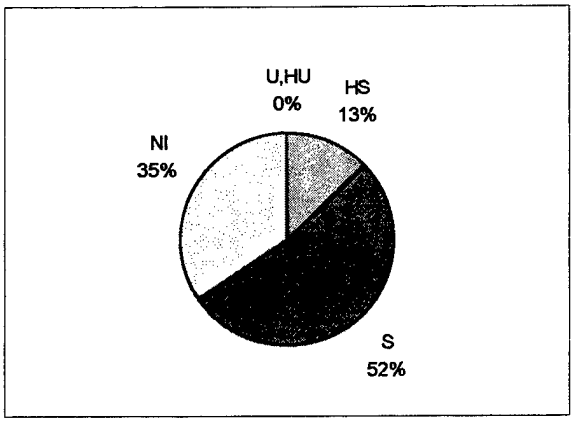

Figure 6d. Contractor Responses to Question 6d

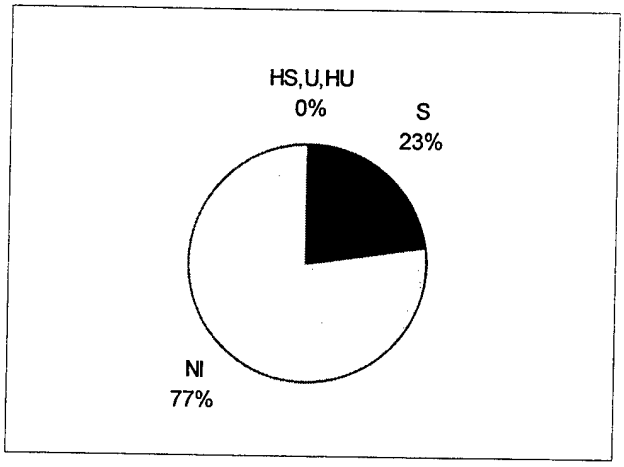

Figure 6e. Contractor Responses to Question 6e

Verbal Responses to Contractor Question 6

1. 6b. We will try to take the most stringent standard as a model and try to bring up others to this level. So its really not SPI that is improving compatibility between military and commercial standards.

2. 6c. With the change from MIL I-4353 and MIL Q-4358 to ISO 9001, there is no cost impact in the present or anticipated for the future. We do not foresee any cost benefit or cost addition.

7. Contractor Question 7 and Responses

If there are differences of opinion between prime contractors and subcontractors regarding the implementation of the SPI, should :

	Numeric Responses
a) The Government through DCMC get involved and help resolve the problems	5
b) Industry should be left alone to resolve any disputes	17
c) Other, please explain	0

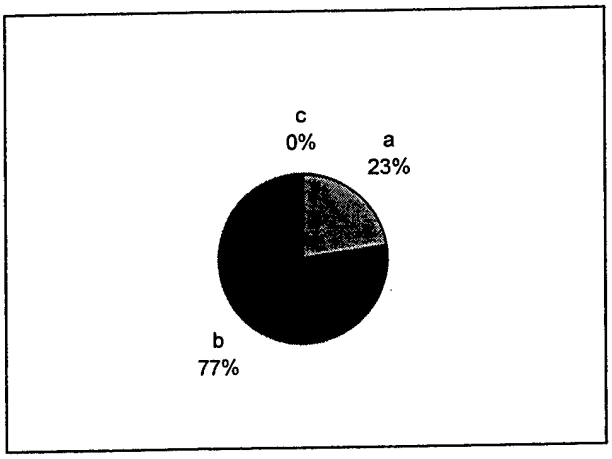

Figure 7. Contractor Responses to Question 7

8. Contractor Question 8 and Responses

How would you improve the SPI process?

This section groups the verbal responses into the following categories: (a) Improve Concept Paper/ Proposal Approval Process; (b) Speed up SPI Approval Process; (c) SPI is working well; (d) Need to change attitudes of the Services, Government; and, (e) More information about SPI needed. These categories were based upon the frequency that each topic was addressed by the interviewees.

a. Improve Concept Paper/ Proposal Approval Process

(1) The Government should incorporate one single concept paper for all of the SPI related changes that a contractor wants. This would speed up the process in lieu of having to submit separate papers for every idea. Also, the Government should get more small contractors at the SPI meetings. The smaller firms may feel intimidated by the "big boys" who attend the Management Council meetings.

(2) Cut out some of the middle people. If a supplier initiates an SPI, the buyer and the Government should get together and determine early if the idea makes sense. The management council should only be

involved later. An early Government teaming effort is needed so that the contractors do not waste time putting together a proposal and then have it shot down later by the management council.

(3) Somehow, documentation needs to be reduced. We need to write calibration on each piece of equipment. It would be better if there were more commercial standards that we could follow so that every time we do a concept paper we did not have to basically come up with a new way of doing the calibration each time. We need some benchmark to go from.

(4) They need to take DCAA out of the SPI loop. We are required to perform ridiculous cost benefit analysis and more than one initiative that we have put up has been blocked by DCAA auditors. The cost benefit analysis is, at times, impossible to do because we don't know what exact costs can be saved. And, the DCAA would block any proposal when it appeared that the SPI would reduce audits.

(5) There needs to be better coordination among industry with "boilerplate" proposals so that we don't have to start from scratch every time. We have too much variation. Every company has different processes that they prefer, some relying on MILSPECs while others have required company unique processes. Also, the approval process is too long, too involved. The local DCMC we have here worked very quickly before they started following the 120 days rule (average time was 54 days). After they had to send things to the Management Council, the process slowed down considerably.

(6) The requirements for ROM (Rough Order of Magnitude) estimates turned out to be a stopping point for us. The process required too much cost savings proof. A lot of the cost savings are unknown right now, but may be realized in the future. So we really cannot find and document the cost savings as per the stringent requirements the Government has set up.

b) Speed up SPI Approval Process

(1) There is a lengthy approval process of the proposals. Because we have multiple customers (the Services), coordination among them takes us a long time to get things approved. The Government needs to take steps

to speed up Service compliance with approved SPIs.

(2) There needs to be more timely response by the contractors and the Government. We have been waiting for an approval by someone on the Management Council for 2 to 3 weeks. The Government dropped the ball and has not finished up. DCMC has been trying to expedite the process, but they can only do so much when you need approval from so many people.

(3) Concept papers take too long to get through the Government. We have spent 10 months waiting for approval on one SPI.

(4) The review and approval process is much too slow. Especially the review and approval coming from the various Services. How to improve this would be to give the ACOs and engineering authorities more latitude in the approval process. Not unilateral authority, but if the ACOs can have local authority to approve block change requests with out having to go through all of the Services, then this would speed up the processing of some SPIs.

(5) We have difficulties getting the SPI process to flow because of our merger. Everyone has different ideas as to how to implement SPI. Also, the Government is not realistic about the time required between the concept paper and the proposal time period. The Government has 120 days to approve the proposal, but we are working on the concept paper with the Government for 6 months. I don't think that the Government can do much to speed up the process. Most of the burden is on the contractor to speed up the process. The Government can only do so much.

c. SPI is working well

(1) SPI is working well for us.

(2) No problems with proposals.

(3) The Government is doing a great job. The people we have dealt with are working hard to be more flexible about consideration, which was a problem when we first started working with the SPI. Also, there really has been a team philosophy between the primes and subs regarding SPI changes.

(4) We have not had any problems with the SPI. The block change process is not time consuming and I don't have any other opinions about how to improve the SPI process.

(5) SPI works pretty good here. It is a highly coordinated effort between us and the Government and our subs. We like to think that we are on the leading edge of some of the acquisition reform initiatives, and so we welcome programs like the SPI. We all would like the process to go faster, but we are satisfied with how it is going.

d. Need to change attitudes of the Services, Government

(1) The DCMC ACO has been very supportive. He does everything he can to speed up the process. The problem is with the Services themselves. They all have their own biases. For example, once when one service had our proposal out beyond the 120 days, we had to go to the generals and admirals we knew in order to push the issue. By the time that we received approval for the SPI, the contract had expired. Finally, we feel that the 120 days is an awfully long time to wait for a proposal to be approved. We don't understand the delays in getting approval of relatively clear cut SPIs.

(2) There is a need to better flow down the intentions of the SPI to the Services and the companies. There is lots of support for the SPI at the top levels of the Government, but not in the "worker-bee realm." There are Government workers who are worried about losing their jobs as a result of the SPI, so they are not enthusiastic about it. What has been a real disappointment for us is when we have submitted SPIs that require regulatory changes. MILSPECs and military standards are not the only things that need changes—regulations do as well.

(3) Allow businesses to more readily use best practices. We are still getting RFPs and RFQs that include the use of old obsolete MILSPECs.

(4) SPI has been a real turn-off. You go through the trouble and expense of the proposal process just to have them denied. The "rice-bowl" syndrome is a major impediment. Because of this, there is nothing moving on packing and crating requirements and Government-Furnished Property (GFP). To improve the process, the Government should make sure that the SPI principals make it down to the entire

chain. The highest levels at the DoD and industry are encouraged by the SPI, but lower levels are not as enthusiastic because it could mean a loss of jobs.

e. More information about SPI needed

(1) The big problem with SPI is that there is not enough sharing of information as to what is a good proposal. We need to know what are the big money makers and what are the best practices that we should adopt.

(2) I don't have any recommendations other than when the process first started, it was like bumping your head against the wall. The Government did not instruct industry on how the policy should be implemented. So we developed our own ground rules.

B. DATA FROM THE SUBCONTRACTOR QUESTIONNAIRE

1. Subcontractor Question 1 and Responses

Has the Single Process Initiative (SPI) affected your work as a subcontractor?:

	Numeric Responses
a) Very positively	0
b) Positively	9
c) Marginally	5
d) Poorly	3
e) No effect	1

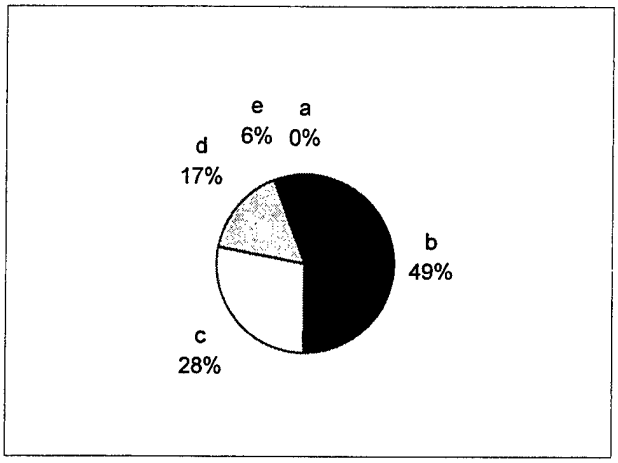

Figure 8. Subcontractor Responses to Question 1

Verbal Responses to Subcontractor Question 1

1. I went through one SPI that was a disaster. The Air Force approved our SPI but the Army and DLA did not. We were trying to get a substitute for a common use item—trying to make a commercial equivalent of a military specification. The Government folks and the Services had meetings on it, we were told to provide more and more paper, but the proposal kept getting refused. Finally, we withdrew the SPI. We feel that the military supply system has been resistant to commercial standards. The military says that the contractors are not cognizant of the application of the items and that we are missing our deliveries. Now we are avoiding a lot of Government work and the Government has to go to people who do not have our experience.

2. Subcontractor Question 2 and Responses

How is your company implementing SPI? (please circle all that apply):

	Numeric Responses
a) Concentrating SPI changes in one area of business	5
b) Applying SPI changes in all areas of business	13
c) Proposing a target number of SPI driven changes	2
d) Instituting an SPI Team	9
e) Other, please explain	0

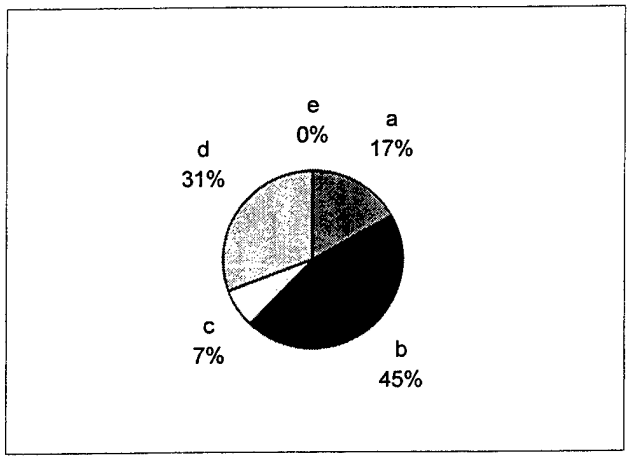

Figure 9. Subcontractor Responses to Question 2

3. Subcontractor Question 3 and Responses

As a subcontractor, are you having any problems implementing the SPI?:

	Numeric Responses
a) Yes	13
b) No	5

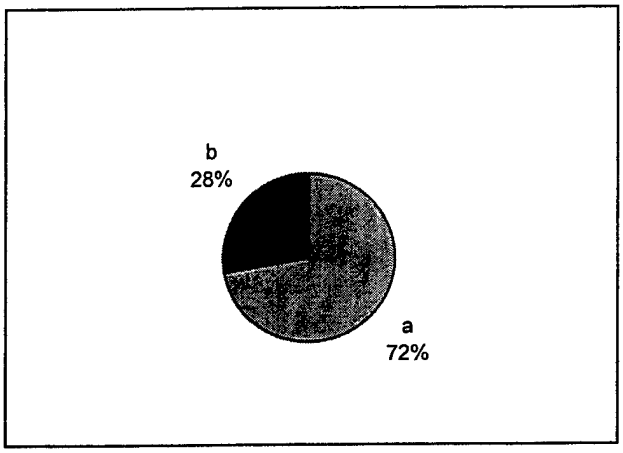

Figure 10. Subcontractor Responses to Question 3

Verbal Responses to Subcontractor Question 3

1. Our problem has been that we have been ahead of the primes. We have instituted changes as a prime contractor, but when we want to apply the changes to our contracts where we are the sub, our primes are not up to speed with what we can do. So we end up with some improvement on our prime contracts and the old way of doing things on our subcontracting jobs.

2. Some Government buying offices will not accept the sub's single processes and the primes are not allowing us to make block changes. They are still flowing down pre-SPI requirements. Another problem is that even with SPI ideas in place, DCAA auditors are trying to put an end to potential SPIs that work toward reducing audit requirements. It's the "rice-bowl" attitude where auditors want to protect their jobs.

3. Primes are not open to changes. Any changes in quality or manufacturing are shot down by the primes.

4. In the "black world" (i.e. classified contracting) it is difficult to get an initiative through because we can't disclose who is the customer, and most of the customers do not know what SPI is anyway. Another problem is having to share procedures with a future competitor (who may be our prime now).

5. The main problem is evident when the prime has a contract with the Government to do something the old way, like soldering according to an outdated MILSPEC, and the prime has not gone to the Government with a block change request yet, so this delays the sub's actions. As a sub, if we request a block change, we can't get relief until the prime gets relief.

6. SPIs are not naturally flowed down by the primes. Our primes have been receptive if similar processes are in our facility, but the primes don't sign concept papers, so they are really not in the loop.

4. Subcontractor Question 4 and Responses

What specific problems are you having implementing SPI? (circle all that apply):

	Numeric Responses
a) Not being included by the prime contractors when block change decisions are made	9
b) Facing redundant/parallel administrative controls	6
c) Facing burdensome startup costs in order to meet commercial specifications	3
d) Not being allowed to protest or make unilateral block changes	5
e) Other, please explain	5

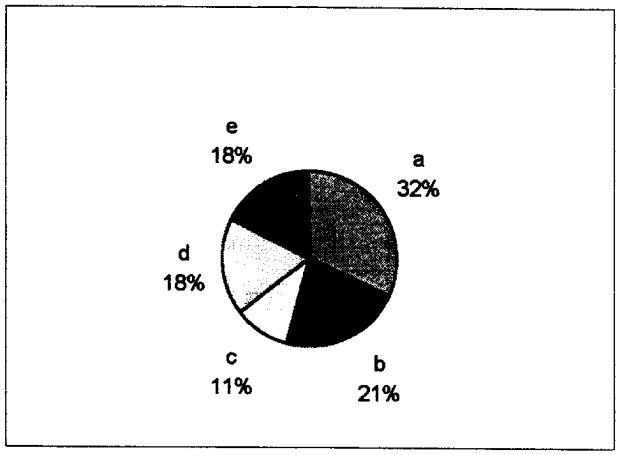

Figure 11. Subcontractor Responses to Question 4

5. Subcontractor Question 5 and Responses

The literature states that the SPI was designed to meet specific goals; please rate how you perceive the success rate of these goals:

a) Helping in the reduction of MILSPECS
b) Increase compatibility b/t military & commercial standards
c) Increased profits/Reduce costs
d) Increased manufacturing efficiency
e) Reduced impediments to technological innovation

Categories:		Numeric Responses				
		5a.	5b.	5c.	5d.	5e.
1. Highly successful	(HS)	9	1	3	1	0
2. Successful	(S)	8	12	5	9	4
3. No impact	(NI)	2	1	7	7	13
4. Unsuccessful	(U)	0	4	3	2	1
5. Highly unsuccessful	(HU)	0	0	0	0	0

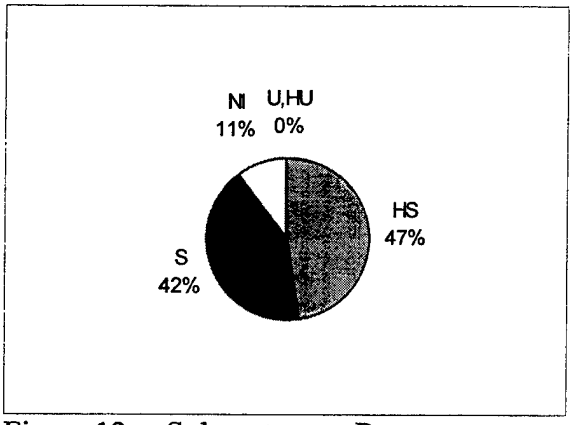

Figure 12a. Subcontractor Responses to Question 5a

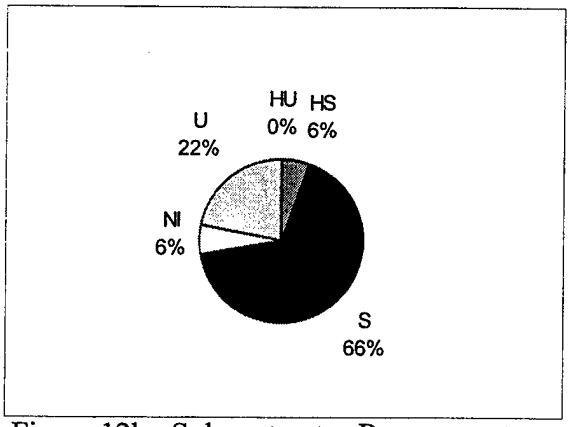

Figure 12b. Subcontractor Responses to Question 5b

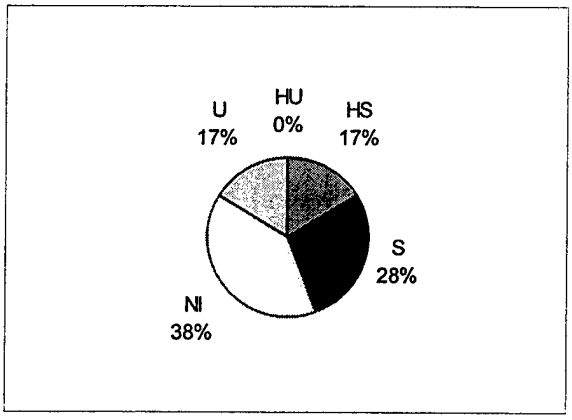

Figure 12c. Subcontractor Responses to Question 5c

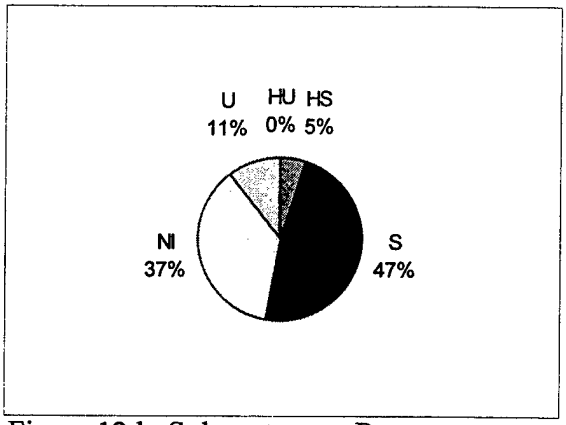

Figure 12d. Subcontractor Responses to Question 5d

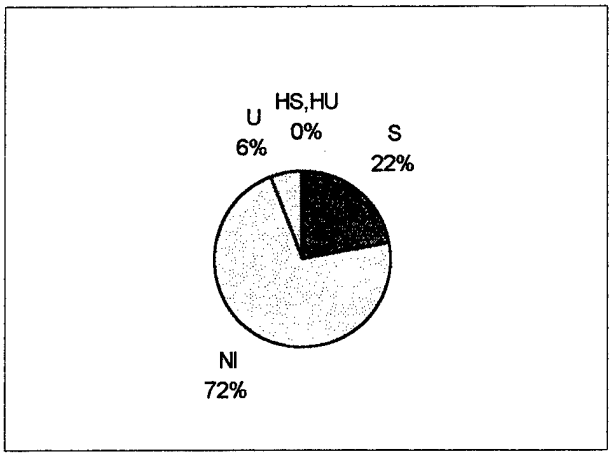

Figure 12e. Subcontractor Responses to Question 5e

Verbal Responses to Subcontractor Question 5

1. 5a. For the sub, what is happening is that the primes are taking the old MIL standards and just applying them to the block change proposals, so there really isn't any progress.

2. 5b. We have been trying to change configuration management rules over to commercial standards, but there has been some ingrained barriers put up by the Government, so this process is going slowly.

3. Processes have really not changed much—there is actually less cooperation with soldering requirements.

6. Subcontractor Question 6 and Responses

If there are differences of opinion between prime contractors and subcontractors regarding the implementation of the SPI, should :

	Numeric Responses
a) The Government through DCMC get involved and help resolve the problems	11

b) Industry should be left alone to resolve any disputes 7

c) Other, please explain 0

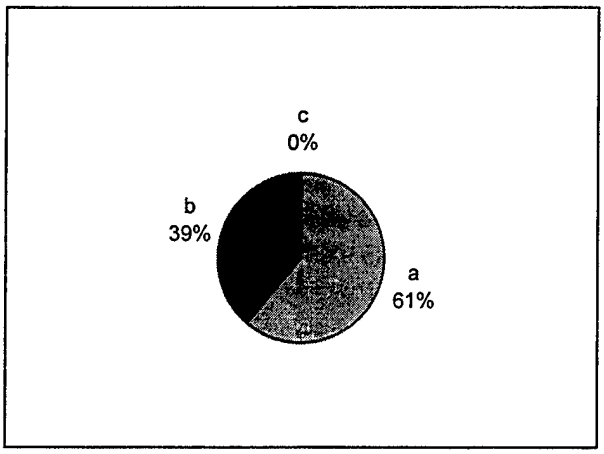

Figure 13. Subcontractor Responses to Question 6

7. Subcontractor Question 7 and Responses

How would you improve the SPI process?

This section groups the verbal responses into the following categories: (a) Relationship between primes and subs needs to be improved; (b) Improve Concept Paper/ Proposal Approval Process; (c) The Government needs to be more active; (d) SPI is working well; and, (e) Speed up SPI Approval Process; and, (f) Less Government intervention needed. These categories were based upon the frequency that each topic was addressed by the interviewees.

a. Relationship between primes and subs needs to be improved

(1) The primes need to be more open to SPI initiatives from their subs.

(2) We are just beginning to see the primes being more interested in our SPIs. But there still should be a better flow of ideas between the primes and subs. There should be more opportunities for the subs to submit block changes directly to the primes.

(3) The primes want to flow down their way of doing business. We want to use ISO as a guide and do things according to an established procedure. In many cases, the primes do not have an SPI approved, but we do, yet they are still requiring an old specification. We need industry-wide established procedures.

(4) There needs to be established procedures for subcontractor SPIs at the prime level. The people at the primes do not fully understand the process. Also, they often do not have a single point of contact for the SPI. We must go to each individual plant and deal with the SPI coordinator at each. For the most part, they are not interested in our block change requests. They don't know how to spell "acquisition reform" let alone how to implement it. There should be a single SPI point of contact at a prime so that the subs and primes can get together and put out a good proposal.

(5) We need to get visibility of the concept paper pushed by the primes. The subs should be in the loop of seeing what kind of changes the primes are trying to get approved. Also, there needs to be a great deal more effort put into working out arrangements between the subs and primes in order to reduce redundant audits and processes.

(6) I would like to make prime/sub relationships more rigid. The primes should be told by the Government that the subs have block change requests and that they should be implemented.

(7) SPI needs to be more easily applicable and implemented on subcontracts. SPI is good for the primes, but not so good for subs. Primes are not getting involved in the development of SPIs nor are they flowing down the provisions. 90% of our work is as a sub and not a single prime has flowed SPI changes down to us.

b. Improve Concept Paper/ Proposal Approval Process

(1) An approved SPI should be good for the future, but what is happening is that the prime contractors are not approving the subcontractor SPIs.

There needs to be more involvement by the Government here. The Government cites privity of contract when the subs need help, but this is hypocrisy—they are involved all of the time with subcontractors. Also, the working level DCMC is putting the burden on the contractors to work on a concept paper for six months. It is only until the paper is submitted that the 120 day clock starts ticking. So what is happening is that the DCMC wants the contractor to put in a lot of effort in the concept paper phase so that the Government people can meet their deadlines.

(2) On one proposal we submitted, the Government asked for changes to it, so we put in a lot of work on it and resubmitted it. But one engineer representing one of the Services didn't like it, so the whole proposal was shot down. After that happened, we decided not to go through the exercise again. The Government wants change, but makes the process too difficult.

(3) The Government needs to get people whose jobs are not at stake to look at the proposals. A lot of the people now who look at the proposals do not have an interest in making it work. Also, the 120 day window is too long. The Government needs to move on proposals instead of wait. We are not going to submit any more proposals because we have had to make too many revisions and it is not worth it.

c. The Government needs to be more active

(1) The DCMC needs to get more active. There needs to be some formal methodology to running some kind of appeal mechanism that deals with problems between the primes and subs.

(2) The Government should get more involved between the prime and subs. The Government is encouraging the primes to flow down provisions of the SPI, but there is little incentive for the prime to help the sub except out of the goodness of their hearts.

(3) There needs to be something done to give the local DCMC more power to make decisions. The obvious SPIs like ISO 9000 still have to go through all of the meetings and the concept papers—this requires a great deal of work.

d. SPI is working well

(1) We don't have any problems with the process.

(2) We think that some administrative aspects could be improved, but otherwise, I don't know how to improve the process.

e. Speed up SPI Approval Process

(1) The SPI process could be speeded up. In some cases the 120 days is way too long of a time to decide a SPI change. There are an awful lot of people involved and too many levels to go through in order to get a proposal passed.

(2) The process needs to be sped up. The Management Council is important, but it has not helped to expedite the process by setting priorities. Also, the ACO needs to have more power. He must be able to push the concept paper through all of the hands more quickly.

f. Less Government intervention needed

(1) The DCAA is the speed-bump in the SPI process. They have actively worked against us by raising fears that without their auditing and oversight, the Government would be screwed. If DCAA was not made part of the process, SPI would not be a problem. They are concerned that commercialization would effectively do away with Government audits, and they are sabotaging companies' attempts to do their work in a more commercial manner.

C. CHAPTER SUMMARY

This chapter presented the data collected from the interviews in three formats: (a) numerically, (b) graphically, and , (c) textually.

The questions from the respective surveys were represented in order, beginning with those of the contractor's survey and ending with the questions from the subcontractor's survey.

The structure of the chapter consisted of each question reprinted in its entirety, potential answers cited, numeric totals positioned next to the corresponding answers and a pie-chart depicting the frequency of each response. Following this, if there were anecdotal comments made pertaining to a particular question, these was noted for the benefit of the reader. If a question did not have quantitative data, such as the last questions of both surveys, the qualitative responses were grouped and recreated from the researcher's notes.

V. DATA ANALYSIS

This chapter will analyze the survey data presented in Chapter IV. The analysis will consist primarily of comparing the survey responses to one another. In this endeavor, there will be emphasis placed upon commonality in the responses as well as significant variances between the opinions of contractors and subcontractors. The objective of this comparison is to clearly identify the characteristics, strengths and weaknesses of the SPI according to the target audience. If responses cannot be realistically compared, then obviously the ideas will be considered independently. By discussing the data in this manner, the information gathered will assist the researcher in answering the bulk of the research questions.

Another important aspect of the comparison of the surveys is that trends can be identified. The importance of evaluating trends is that the researcher may further determine probable actions that could be taken to improve the SPI. These trends will be discussed in the following chapter.

A. QUESTION 1: OVERALL IMPRESSIONS OF THE SPI

The responses to this question are consistent with the literature review. The literature suggests that more contractors than subcontractors had a positive impression of the SPI. The data indicate that the ratio between contractors and subcontractors finding the SPI positive is 73% and 49% respectively.

The fact that nearly half of an entire industry has a positive impression of an acquisition reform measure is a good sign. It is true that the subs need more attention,

and this is an area of concern. But the Government can feel optimistic about the SPI given that profit-motivated contractors have embraced it. After all, a primary goal of the SPI is to save the Government money on existing and future contracts.

One should still not overlook the less satisfied respondents. A far greater percentage of subcontractors than contractors find the SPI of only marginal or poor value. For subcontractors, 28% answered that the SPI affected them marginally and 17% answered that it had affected them poorly. This can be compared to the contractor responses of 14% and 5% respectively. The implication from these percentages is that the subcontractors who chose the marginal response are a significant group in the population. On the other hand, the contractors who responded similarly may simply be the disaffected few. By further examining the reasons why so many subcontractors choose the marginal option, we may find that there are a few key areas of the SPI that could be improved upon. It is possible that once these areas are addressed and actions taken, the number of positive respondents would increase significantly. Conversely, if critical areas continue to be ignored, then a number of subcontractors in the marginal category now could slip to the dissatisfied category.

In addition to the numeric responses, the verbal responses to question 1 indicate that the SPI has been especially good for contractors and less so for subcontractors. Contractors note that direct and overhead costs have been reduced because of the ability to buy products on the open market and that less employees are required to comply with Government requirements. On the other hand, a subcontractor respondent states that the proposal process is a disappointing ordeal when mutual consent on the SPI cannot be

reached by the Management Council. These comments are not atypical. What the research will show as the examination of the questionnaires continues, is that the respondents who most like the SPI cite cost savings and commercial practices as positive points, while those who dislike the SPI have become disenchanted with the "System" or the Government administration of the initiative.

B. QUESTION 2: SPI IMPLEMENTATION

Responses to this question suggest that companies have put the SPI to the test. In comparing the two surveys, what is initially striking is that 45% of all respondents have attempted to apply the SPI to all areas of their business. This acceptance of the SPI suggests that these companies have given the SPI a reasonable effort in their facilities. The widespread utilization of the SPI at individual plants also adds credence to any criticisms or comments about the initiative that will be revealed in the proceeding questions.

Another important statistic to consider from the questionnaires is that nearly a third of both targeted groups have established standing SPI teams or ad hoc teams. The percentages for contractors is 26% and 31% for subcontractors. In most cases, those who answered "e) Other," said that they did not have a standing team but an ad hoc SPI team formed as needs arise. It is encouraging again that a significant portion of the companies have committed individuals to SPI. Not only could this be equated to future savings for the Government, but it shows that the SPI has worked its way into the industrial infrastructure. Given this last idea, what is crucial for the Government to consider is how

to improve the process even further so that this infrastructure can foster an increased number of proposals.

C. QUESTION 3: ACKNOWLEDGMENT OF PROBLEMS

The data suggest that there is a significant gap between contractors and subcontractors in their acknowledgment of SPI related problems. For contractors, only 9% agree that subs could be facing some inequities in dealing with the SPI. This is opposed to 72% of the subcontractors claiming that they are having difficulties with the initiative. This imbalance suggests a lack of effective communication between contractors and subcontractors about SPI related problems.

Such a communication gap invites a consideration of the macro relationship between prime contractors and their subcontractors. A reasonable person may surmise that primes and subs must work hand-in-hand in order to produce one product. In fact, during the literature review, industry executives indicate that subs provide nearly 70% of the work done on advanced aircraft. [Ref. 12] It would appear then, that contractors would place great emphasis on knowing their subcontractors' capabilities and concerns intimately. Such knowledge would be the subcontractors' processes, procedures and how the subs are dealing with manufacturing costs. This knowledge would also extend to how the subcontractor is affected by acquisition reform initiatives taken up the contractor. What the questionnaire data suggest however, is that either the relationship between the two is restricted to immediate needs rather than the development of a long term buyer-

seller relationship, or that there is not enough incentive for contractors to fully consider the subordinate supplier.

The verbal responses from both the contractors and subcontractors to this question help substantiate the above statement. The contractors who state that subs are having difficulties conclude that part of the problem is that primes are narrowly focused on procedures that are good for their business. Often, these procedures are mandated without regard for subcontractor concerns. Essentially then, contractors seek immediate cost savings within their own plants and either do not realize or have no incentive to investigate how costs across the spectrum of the industry may be affected by their actions.

Subcontractors outwardly state that there is a communication gap between themselves and the primes. Some note that either the primes are not listening or do not have the will to work in concert with the subs in the development of a mutually beneficial SPI.

D. QUESTION 4: CONTRACTORS QUESTIONNAIRE, FLOWING DOWN SPI

What is interesting about the data gathered here is that fully a third of the respondents (32%) are not flowing down the provisions of the SPI. This can be linked to the responses to question 3 where some subcontractors express dismay over the lack of shared information between the primes and subs. As one respondent states, "SPIs are not naturally flowed down by the primes." Again we may point to a lack of a clear incentive in the SPI process that would encourage prime contractors to include their subcontractors in the decision-making loop.

E. QUESTION 4, SUBCONTRACTOR AND QUESTION 5 CONTRACTOR: FLOWING DOWN PROVISIONS AND THE PROBLEMS ASSOCIATED WITH CONTRACTOR FLOW DOWNS

The responses to these questions show that there are contradictory impressions held by contractors and subcontractors. While contractors cite a particular action that their company has taken, subcontractors state that their greatest problem is inaction by the contractors. The difficulty in interpreting these data leads the researcher to consider closely the verbal responses to these questions.

Comparing the responses, the most common problem that subcontractors cite is not being included in the contractor's block change decision making process (32%). Ironically, the most frequent response from the contractors (40%), is that they are including the subcontractors when making decisions regarding block changes. In fact, one contractor indicates in a verbal response that his company is open to subcontractor better business practices.

The second most frequent response for both surveys is how redundant or parallel administrative controls are a problem for the subcontractors (21%), while contractors said that they are trying to reduce the same controls when flowing down SPI provisions (32%).

While start-up costs are not a significant issue to either the subs or the primes, the idea of protests or unilateral block changes by the subcontractor is the third most significant issue to both groups. Contractors respond 16% of the time that they allow such input from the subs, while subcontractors cite the inability to protest changes or make their own 18% of the time.

The curious aspect of these responses is that it appears a virtual tug of war exists between the prime contractors and subcontractors. While the subcontractor side is "pulling" hard with criticisms, the contractor side is equally engaged, touting how their actions are dictated by fairness for the subcontractors. The interesting aspect of these responses is that they are made not in a collective forum, but independently of one another. Given the consistency of the responses, one observation that can be made is that the key issues are known by both the primes and subs. What is lacking is either the incentive by either side to find solutions or some form of intervention between the two sides to resolve industry problems.

The verbal responses to these questions assisted the researcher in developing these observations. From the contractor's perspective, they have been open to their subcontractors, yet any of the following conditions occurred: 1) the subcontractors have shown disinterest in changes that may affect them; or 2) the problems of the subs are their own concern; or 3) by allowing subs to submit their own changes, it may not work in the interest of the prime. It appears that the prime contractors are not aggressively pursuing ways to team with the subs in the SPI process. The responses are collectively passive or dismissive in tone, leaving the researcher to believe that there is not yet an economic incentive to act on subcontractor recommendations and/or concerns.

In fact, there may be an economic dis-incentive. An advantage to the SPI is the reduction of administrative procedures required by the Government. With the ability to employ commercial procedures, there is little reason for a contractor to accept different practices suggested by a subcontractor. Taking an example from the literature review,

Lockheed Martin has been able to reduce parts documentation with an approved SPI. Instead of abiding by Government documentation requirements, the company can redefine the approval and record keeping procedures to its own liking. A conflicting subcontractor idea on how to do the same task could result in additional procedures and more oversight by the contractor. The same situation could occur when the changes involve manufacturing processes and quality assurance procedures.

The subcontractor verbal responses to this question are actually attributed to question 3 of the subcontractor survey but they apply to this question as well. The main concerns are that the primes are simply not open to suggestions or have not instituted the same SPI related changes as the subcontractor. As discussed above, the issue of the primes not listening to the subs is hampered by the original purpose of the SPI. But the primes not having proposed the same streamlining changes as the subs can be addressed further. Some subs actually have a more mature SPI program than prime contractors, but are not able to take advantage of this position. According to the "Subcontractor Single Process Initiative" memorandum by Dr. Kaminski and discussed in detail in chapter 3 of this thesis, "Management Councils at prime and subcontractor facilities should facilitate and enable substitution of accepted subcontractor SPI processes." [Ref. 9] The problem is that the accepted subcontractor SPI processes are subject to the approval of a contractor SPI. Only a resident contractor ACO could intervene between the prime and the sub and encourage the prime to submit an SPI. If this occurs, then the sub can employ the latest cost-saving measures on an existing contract.

F. QUESTION 5, SUBCONTRACTOR AND QUESTION 6, CONTRACTOR: GOALS OF THE SPI

The results from this multi-faceted question shows that despite one area of disagreement, there is great common ground between the opinions of the contractors and subcontractors. In order to evaluate the relative merit of the SPI goals, and in turn suggest some strengths and weaknesses of the initiative, this part of the discussion will examine the responses to the consecutive parts of the question. Commonality, as well as the one area of disagreement, will be identified and evaluated.

1. Helping in the Reduction of MILSPECS

As discussed in the literature review of this thesis, Secretary of Defense Dr. William Perry announced in 1995 that the SPI is a part of a "new way of doing business" for the Federal Government, and this means the reduction of Government unique requirements. Contractors (41%) and subcontractors (47%) find this aspect of the SPI to be highly successful. Even 50% of the contractors and 42% of the subcontractors acknowledge that this area has been successful. This agreement shows that a major Government objective has in most cases, trickled down to the industrial base effectively.

2. Increased compatibility between military and commercial standards

Again referring to the words of Dr. Perry on the subject of the SPI, block changes should be made on a facility-wide basis in order to "...unify management and manufacturing requirements within a facility, where ever such changes are technically acceptable to the government." [Ref. 6] In this endeavor, contractors (63%) and subcontractors (66%) have found this to be successful. The significance of this agreement

between the targeted groups is that they both find economic value in better compatibility between military and commercial standards. The reason could be that the SPI has encouraged companies to be more competitive by allowing them to reduce the overhead associated with managing manufacturing processes. For example, companies can produce commercial and military products under similar quality standards, thereby consolidating or simplifying oversight and documentation.

This question also shows a difference of opinion between contractors and subcontractors. While only 5% of contractors find this area to be unsuccessful, 22% of subcontractors respond in this manner. One reason is that subcontractors are not fully part of the SPI process. Referring back to question 3 of the subcontractor survey, not all subs are able to take advantage of the block change process until their prime has taken action.

3. Increased profits/Reduced costs

These areas often go hand-in-hand and reflect the Government's desire to "...foster a more competitive industry" and save money through the use of the SPI. [Ref. 5] What the data show is that there are two different camps made up of both subcontractors and contractors on this issue. The first camp is of the opinion that this aspect of the SPI has been at least successful. Subcontractors contend that this area has been successful (28%) to highly successful (17%). Contractors have chosen successful 32% of the time and highly successful 5% of the time.

The second camp believes that it is generally too early to quantify cost reduction or increased profits as a result of the SPI. For primarily this reason, 38% of the subcontractors and 58% of the contractors have selected "no impact" in answering this question.

These responses indicate that for those companies who are able to immediately make changes in their facilities that impact the direct cost of a product, the benefits of the SPI can be quantified. Examples of such changes are presented in the literature review of this thesis. But for other companies who have employed the SPI to change to ISO-9001 quality standards, for example, then it is simply too early to consider the bottom line. It is important to remember that in addition to cost savings through SPI, the Government also wants "... to obtain a better product." [Ref. 5] Not that "better" and "less costly" are mutually exclusive, but in some cases we cannot determine the real savings that can be achieved through a higher quality product until the item has run through the life-cycle. Hence, some respondents find it fruitless to demand immediate cost savings analysis on every item subjected to the SPI.

4. Increased manufacturing efficiency

In their SPI proposals, contractors are required to describe practices that will increase efficiency. Over half of all respondents feel that this area of the SPI has been successful or highly successful. What this suggests is that the SPI may be well suited for the aerospace industry. Given the industry's reliance on annual budget appropriations and the constant political threats to programs, the ability of a company to employ the most

efficient commercial manufacturing methods is highly beneficial. Because the company is able to utilize commercial practices in the building of the product, workers are not restricted by their knowledge of only military standards or specifications. This broader knowledge base could allow for employees to be transferred, if necessary, to non-government projects.

Also, the opportunity to increase manufacturing efficiency means that Value Engineering Analysis (VEA) can be employed to the fullest extent. Companies can look hard at each phase of the manufacturing cycle and reduce costs that will benefit the Government on an existing contract and benefit both the Government and the company on future contracts.

A final point that can be made on this question is that many respondents stated that the SPI has no impact on manufacturing efficiency. The totals for subcontractors and contractors are 37% and 35% respectively. One reason these individuals feel this way is that their SPI concept papers deal with the integration of ISO 9000, 9001 and 9002 quality standards. So while overhead may have been affected by these changes, manufacturing efficiency is not.

5. Reduced impediments to technological innovation

For a company to be competitive, it must be able to innovate. Improved processes or technological upgrade can result in better products even on existing contracts. But what the data show is that market competition is what spurs innovation, not the Government. "No impact" is selected by 77% of the contractors and 72% of the

subcontractors. The verbal asides that spokesmen make to this question are generally dismissive to any contention that military specifications or standards restrict technological innovation.

Nevertheless, 23% of contractors and 22% of subcontractors state that the SPI is successful in reducing impediments. An explanation for these answers is that these companies maintain a high percentage of Government work. If Government contracts to a large degree established the company, as in the case of many subcontractors, then the reduction of requirements could invite new ideas.

G. QUESTION 6, SUBCONTRACTOR AND QUESTION 7, CONTRACTOR: INTERVENTION WHEN DIFFERENCES OF OPINION EXIST BETWEEN SUBCONTRACTORS AND PRIME CONTRACTORS.

The responses to this question show the greatest difference of opinion between the two groups of respondents. In the event that some of the difficulties raised by subcontractors in question 3 and 4 of the subcontractor survey actually materialize, then 61% of the subcontractor respondents would like to see the Government get involved in resolving the issues. Conversely, 77% of contractors would rather deal with these problems without Government intervention.

It is undeniable that control and the freedom to manage a program is a major benefit of being a prime contractor. But with the relative autonomy (based often on contract type) is the ultimate responsibility for every aspect of the product. Indeed, Federal Acquisition Regulation subpart 46.105, the contractor is responsible for meeting quality requirements outlined in the contract:

(a) The contractor is responsible for carrying out its obligations under the contract by --

(1) Controlling the quality of supplies or services;

(2) Tendering to the Government for acceptance only those supplies or services that conform to contract requirements;

(3) Ensuring that vendors or suppliers of raw materials, parts, components, subassemblies, etc., have an acceptable quality control system; and

(4) Maintaining substantiating evidence, when required by the contract, that the supplies or services conform to contract quality requirements, and furnishing such information to the Government as required. [Ref. 1:part 46.105]

Therefore, if a contractor is to agree to Government intervention to resolve an issue between itself and its sub, will the resolution of the conflict cause a shift in responsibility for the end item? Also, will a settlement to a disagreement mean that a contractor cannot submit a SPI if it makes good business sense but is disagreeable to a subcontractor? An affirmative answer to either of these questions would change the nature of the relationship between the Government and prime contractors. The prime's contention is that they would rather be told by the Government what it wants and not how to do it. There cannot be acquisition reform unless companies are allowed to make decisions about their processes.

Subcontractors, especially in the aerospace industry where prime contractors have dwindled over the most recent decades, are at a disadvantage. As the literature review suggests, many have to use different procedures for similar items just to meet the needs of the remaining primes. What the subcontractors would like to do is fully take full

advantage of the acquisition reform measures offered by the Government. Because of their subordinate positions to a prime, they recognize that only a buyer can influence the seller, and in this case, the buyer is the Government.

H. QUESTION 7, SUBCONTRACTOR AND QUESTION 8, CONTRACTOR: IMPROVEMENT OF THE SPI PROCESS

The purpose of this part of the analysis is not to determine whether the opinions are correct or incorrect. Rather, an attempt will be made to understand the respondents' motivations. From such an understanding of the ideas and motivations of the respondents, the researcher may then recommend in the next chapter actions that could be taken by the Government. The researcher will first identify and discuss areas that are common to both contractors and subcontractors. Then, the remaining part of this chapter will delve into areas that are unique to contractors or subcontractors.

1. Areas of Common Interest

What the data show is that there is some common ground between the primes and subs especially in the process surrounding the concept paper/proposal.

For contractors, the elimination of barriers preventing expeditious approval by the Management Council is a top priority. Some of these impediments to progress include excessive paperwork, oversight and rough order of magnitude (ROM) estimates.

Referring back to comments made by Dr. Kaminski in his December 8, 1995 memorandum, what the contractors are suggesting is ironically what the Government tried to avoid in establishing SPI procedures. The memorandum indicates that the Government should team with industry so not to waste time and develop a "streamlined approach" so

that changes could come with reasonable effort. [Ref. 7] Also, the cost benefit analysis should be sufficiently simple to allow a rapid judgment by the ACO.

The responses suggest two ideas. First, it could be that the respondents are expressing frustration over being involved in a process that may or may not affect the bottom line. We have to remember that over half of contractor respondents feel that there are imperceptible cost savings or increases in profit as a result of the SPI. So any time expended on a process with questionable returns can be seen as time wasted.

The second idea is that contractors have approached the SPI thinking that the process will be quick, but have been confronted by Government officials who are not inclined to make hasty decisions or decisions that have profound implications. If members of the Management Council are concerned that SPI related changes could potentially affect end item performance, then a decision will come slowly. Also, there may be philosophical differences of opinion between council members. Several respondents mention the DCAA. There may exist varying opinions even on the Government side as to the necessity or utility of audits. But to decide that an audit is not necessary is a bold decision that must take into account public opinion. Such a declaration could imply to those who watch Governmental activities closely that procurement oversight is being compromised and that Federal dollars are being mismanaged.

Thus, with the need for consensus before changes to a contract can be executed, even a small number of dissenters could halt a proposal and make proposal authors feel that their efforts have resulted in nothing of value.

For subcontractors, improvement of the concept paper/proposal process is also mentioned, but less frequently. The criticisms expressed by the subcontractors are similar to those of the contractors. In particular, subs feel that the concept paper process is long and burdensome and that proposal oversight is hampered by biased members.

Subcontractors are as aware of profits and losses as contractors. Thus, it could be very irritating to spend a great deal of time on a concept paper or proposal and have it rejected. Businesspersons are well aware of risks. But what could be moving some of the respondents to dismay over the process is that the risk of getting a proposal rejected is greater than originally anticipated. Given the very positive memorandums by DoD officials on a fast-paced approval process, subcontractors could be disappointed by a reality that does not feature rapid, positive decisions.

Another area of common agreement between the primes and subs is that the proposal approval process should be hastened. We can see from the literature review, in particular the memorandums by Dr. Kaminski, that the SPI process is supposed to be efficient and fast. But speed is often in the eye of the beholder, and while the Government may feel that 120 days from beginning to end is a brisk pace, both contractors and subcontractors note that this period is too long.

Looking first at the comments made by contractors, some blame the Services for delaying their input on a proposal. Others suggest that the problem is multidimensional, meaning that with so many approvals needed and a consensus required, there are any number of potential hazards that retard the process. These comments suggest that contractors are frustrated with the checks and balances established by the Government. In

order to prevent a weapon system from undergoing unnecessary or harmful contract changes, varying opinions are necessary. Indeed, the acquisition of an aerospace weapon system is by its very nature a collective effort from the concept exploration phase to manufacturing and fielding. Thus, it is often no small task to waive the opinions of a stakeholder in the process. Contractors may not be as interested in this larger perspective as the Government. They would rather see that the resident ACO be able to execute a SPI proposal without thorough consideration by all of the stakeholders. This desire of the contractors is not unreasonable, but simply difficult for the Government to do given the political oversight accompanying aerospace acquisitions.

The ideas promoted by subcontractors are nearly identical. They too cite that 120 days is "...way too long of a time" and that the Government is not doing all that it can to hasten the process. Often smaller in size relative to their prime contractors, the subcontractors are well aware that excessive time on any one project could affect business costs. Additionally, their perspective may be further influenced by time delays caused by the prime contractor.

A final opinion expressed by both contractors and subcontractors is satisfaction with the SPI. Again more contractors than subcontractors came to this conclusion. One reason for this view is commitment to acquisition reform. If a company has exhibited faith that SPI is part of the greater picture of improving the Government procurement process, they are more likely to overlook the pitfalls of the initiative and concentrate on the advantages.

2. Unique Areas of Opinion

The areas that are unique to contractors are that the attitudes of the Government representatives, including the Services, should be changed, and that information about the SPI should be more effectively shared. For subcontractors, the relationship between the primes and subs needs to be improved. Also, many subs state that the Government should be more active in the SPI process, while other subs feel that the Government should be less demanding in the SPI process.

The unique contractor and subcontractor viewpoints have everything to do with how they can individually maximize the SPI. As will be seen, contractors desire fundamental, philosophical changes to be made by the Government so that they can decrease costs. Subcontractors, on the other hand, seek Government help in order to better participate in the SPI and experience some of the benefits enjoyed by the contractors.

Looking first at the contractor issues, 4 of the 22 respondents feel that there is a need for the Services to contribute to the SPI process more constructively. From the literature review, we know that the Services are major stakeholders in the SPI approval process. They have representatives on the Management Council and the approval of a proposal may involve any or all of the Services who are customers for an end item. The position of the Services implies that they would be especially cautious of changes. They must continually think of mission needs. And, the Services usually hold very different opinions about how a desired product will meet their individual mission needs.

From the contractors' perspective, they see the Services as operating with a "rice bowl" mentality. This means that each Service is guarding its power or unique needs and is very hesitant before compromising on any issue. Contractors allege that SPI proposals are delayed past the 120 day window due to the Service's parochialism and/or risk aversion. In some cases, delays of this type can cause the proposal to become a moot point when the contract is actually competed before a decision can be made by the Management Council.

Contractors are also frustrated by an apparent disregard for DoD policy by Service representatives. While the Secretary of Defense is promoting the elimination of military specifications and standards, there are instances where Request for Proposals (RFPs) authored by the Services contain requirements for outdated specifications. In instances such as this, industry members wonder if SPI information is being disseminated effectively.

The second contractor unique issue regards insufficient information about the SPI. Contractors are saying that it is unclear what a good proposal looks like. If they are going to invest time and energy into SPI, they would rather have guidelines to make the process easier. What is ironic about this comment is that again, Dr. Kaminski's memorandum of December 8, 1995 promoted early teaming between contractors and ACOs in concept paper and proposal formulation. [Ref. 7] The data show that there are instances where this teaming is not being accomplished to the satisfaction of industry.

Looking now at subcontractor opinions, the number one issue is that the relationship between subs and primes needs to be improved. Many of the points raised are similar to what has already been discussed. Subs are dissatisfied that a communication gap

exists between them and their primes, that the primes understand the SPI process less than they do, that the primes have complicated the process with multiple points of contact, and that there needs to be a more rigid rules established mandating contractor consideration of subcontractor SPI concerns and proposals.

The data show that the opinions of the targeted group are consistent with the opinions expressed in the literature review. Subcontractors are finding that they are not an active participant in the SPI process and that there is really little that they can do about it. What appears to be a contentious issue for the subs is that the Government's official policy is privity of contract, but various requirements are nevertheless flowed down that affect the subs directly. On cost-reimbursement contracts, subs are required by the prime and the Government to maintain adequate accounting practices that are subject to audit beyond the completion of the contract. Also, socioeconomic objectives may be flowed down to the subcontractor level. With the many requirements that subcontractors have had to fulfill in the interest of the Government, one may see how frustration could result when the Government will not do more than facilitate. What the subs would like to see is a program that may be more beneficial to them than the "Subcontractor Single Process Initiative" discussed in the literature review portion of this thesis.

The second point that the subcontractors raise also has much to do with the relationship that they have with the primes. Subs would like to see more Government involvement. What this involvement should be is intervention on behalf of the subs or more power given to local DCMC officials to make decisions. One reason behind the desire for Government help is that subs do not see that there is a formal appeals process in

place that subcontractors could turn to if they are having problems with prime contractors. According to Dr. Kaminski during a March 31, 1997 press conference, if a contractor is requiring a subcontractor to perform work as per an original contract and an approved SPI process is in place at the subcontractor facility, then the approved process must be employed [Ref. 21] Other than this provision, there is currently no other relief mechanism for the subcontractor.

Regarding the subcontractors' idea that more power be given to local DCMC officials to make decisions, it appears that subs want the ACOs to make trade-offs that would directly affect the SPI process. By direction, the Contract Administration Office (CAO) has the fundamental responsibility for the approval of a SPI related change. However, the scope of their authority is limited to understanding the nature of the change, organizing and facilitating the Management Council. The ACO only acts as a point of contact and as a change agent. This individual does not have the authority to decide whose opinions are valid and whose should be ignored. Thus, if the Government would elevate the ACO's decision making authority, then subs assume a significant risk. If an empowered ACO is in disagreement with a subcontractor, the idea proposed may be dropped before a full Management Council would have their say in the matter. Such a situation would compromise the integrity of the SPI process. In sum, it appears that subcontractors are assuming that more Government oversight would be beneficial more times than not.

An alternative viewpoint is the subcontractors' last unique suggestion. Some feel that there is too much Government involvement in the SPI process. The idea expressed is

that some Government stakeholders such as the DCAA are not interested in streamlined procedures if it means less Government oversight. Again, this comment is motivated by disagreement with the checks and balances established by the Government.

I. CHAPTER SUMMARY

This chapter analyzed the data presented in Chapter IV. The expressed intention was not to state if contractor or subcontractor opinions were right or wrong, but to compare the results and determine why various respondents may have reacted as they did. What the data showed was that there are areas of commonality and difference between the targeted groups. Both contractors and subcontractors expressed the following: 1) satisfaction with SPI overall; 2) that they have made reasonable attempts to implement the SPI; and, 3) that they feel that the benefits of the SPI are the reduction of military specifications and standards, increased compatibility between military specifications and standards, reduced costs, and in some cases, increased manufacturing efficiency. The motivations behind these responses are largely economic. Both subcontractors and contractors are concerned about profit maximization, so cost reducing measures instituted by the Government are welcomed.

There was also common ground in saying that the SPI has not been a significant factor in the reduction of impediments to technological innovation. Respondents generally find that market competition spurs innovation more effectively.

Differences between the targeted groups include opinions about how much affect the SPI has had on subcontractors. There appears to be a communication gap between

prime contractors and subcontractors. Prime contractors are content with reducing their own costs without total regard for the affect such measures may have on their subcontractors. Subcontractors are feeling ignored by the prime contractors and are concerned that they are not able to fully partake of SPI related benefits.

The final question of both surveys gave subcontractors and contractors the opportunity to express their views about needed changes to the SPI. Here again, there was common opinion as well as differing views. One common criticism about the SPI process from both groups was that it is a slow and often daunting process. It appears that industry spokespersons are not as interested in the concept of checks and balances as is the Government. Another reason for these criticisms could be that individuals may have been frustrated by the Management Council's reluctance to rush to decisions on important contract changes. There was also a common feeling among members of the targeted groups that the SPI was being managed effectively by the Government and that there was no need for changes.

There were also differing views. For prime contractors, they would like to see the Services contribute to the SPI process more effectively. Primes see the Services as unnecessarily delaying proposals for unclear reasons and not incorporating SPI changes in new RFPs. These comments come from the fact that that the SPI process is an investment in time and the prime contractors are reluctant to waste manpower and energy without a reasonable return. Also, primes would like to see more information about the SPI circulated around the aerospace industry. The reason for this is so that contractors could better understand how best to utilize the SPI.

Subcontractors cited the biggest problem being a lack of good communication between them and the prime contractors. As a result of this situation, they feel left out of acquisition reform. Subs would like to see more Government involvement so that they can build a better business relationship with the prime contractors. However, some subcontractors would actually like to see fewer Government stakeholders in the proposal approval process. It is believed by some subs that certain Management Council members are not truly committed to streamlining processes.

VI. CONCLUSIONS AND RECOMMENDATIONS

The objective of this chapter is to provide a summary of DoD's experience with the SPI and how the SPI has affected aerospace subcontractors. To meet this objective, the chapter will first identify the trends in the data. Secondly, recommendations will be provided to improve the SPI process and encourage greater industry participation. Third, the research questions will be succinctly answered. Finally, the researcher will conclude by offering ideas for further research on the SPI.

A. CONCLUSIONS

The following conclusions are based upon trends in the data. These trends were determined by a holistic consideration of the opinions expressed by the targeted groups during the interview process. It is acknowledged that this data evaluation is influenced by subjectivity due to the mixture of quantitative and qualitative responses. However, the researcher has maintained the integrity of this effort by not focusing on extreme opinions or even the "average" response. Rather, as reasonably as possible, all thoughts were weighed and ideas consolidated. From here, a series of phrases were developed. These phases taken as a whole characterize the basic ideology of the respondents.

1. The SPI is a valuable acquisition reform tool that has been given a fair trial by the aerospace industry. This trend was determined after considering the generally positive responses to the first and second survey questions.

2. A communication gap exists between the prime contractors and the subcontractors and this is the principal detriment to the successful implementation of the SPI across the entire aerospace industry. This trend

was determined after considering the responses to question three of both surveys where a definite disagreement existed as to how the SPI has affected subcontractors.

3. There are few quantifiable incentives for prime contractors to consider how their actions may affect any of their subcontractors. This trend was determined after considering question four and five of the contractor survey and question four of the subcontractor survey. There are contradictory impressions held by the targeted groups as to the flowing down of SPI provisions.

4. The SPI has been helpful in advancing acquisition reform goals such as streamlining, but it has not been as influential in the reduction of industry-wide manufacturing costs or in the encouragement of innovation as originally hoped. This trend was determined after considering question six of the contractor survey and question five of the subcontractor survey. Here there was agreement that the SPI contributed to some acquisition reform goals such as military specification reform, but disagreement over other goals that were mentioned in the literature review of this thesis.

5. The Government does have a role in dealing with the problems of subcontractors. This trend was determined after considering question seven of the contractor survey and question six of the subcontractor survey. The researcher is not arguing that the Government has a right to interfere between contractors and subcontractors. Rather, the Government can participate in the SPI process in a manner that encourages dialogue between the two groups.

6. The SPI process could become more efficient and effective. This trend was determined after considering the last question of both surveys. Given that both targeted groups are overwhelmingly concerned about the SPI process, it is reasonable for the Government to consider changes to its concept paper/proposal approval methodology for the sake of greater efficiency and increased industry participation.

B. RECOMMENDATIONS

1. Continue to promote the use of the SPI.

This recommendation is based upon the first trend. It is not enough for the Government to allow the SPI to run its natural course without modifications. Promotion of the SPI means that the Government should identify the weaknesses of the initiative, take corrective action and reveal the improved SPI to industry. The benefits of the Government taking such actions are increased participation from industry and enhanced opportunity to achieve cost savings. In addition, companies previously disenchanted with the initiative may now want to give it another try. This would expand acquisition reform across the industry.

2. Open lines of communication between subs and prime and subcontractors through more effective ACO participation.

This recommendation is based upon the second and fifth recognized trends. The problem is that subcontractors feel that they are not being adequately "heard" by the contractors. The bridge to this communication gap could be the ACO assigned to individual prime contractors and subcontractors. The privity of contract does prevent the Government from mandating actions that the prime contractor will take with regard to his subs. There is no need to legislate changes to this rule as it has been useful for the Government. But if the subcontractor has an idea that is a good business decision and could reduce cost or price of a current contract, then it would logically follow that the

contractor would be interested. Conversely, if the subcontractor can quantify how a contractor's SPI will not be cost effective and actually increase price, then there should be similar interest on the part of the contractor. The ACOs could be the information conduit between the primes and subs. By working together, the cognizant subcontractor and contractor ACOs could engage in the following actions: 1) relay viable ideas from a subcontractor to a contractor; 2) keep contractors and subcontractors in a knowledge equilibrium with regard to approved processes; 3) promote the development of complementary prime/sub SPI changes that will become new industry-wide standards; and, 4) encourage the reconciliation of contrary views held by contractors and subcontractors. In sum, this solution advocates another dimension to industry teaming.

3. The Management Council should strive to identify the best possible practices in any proposal.

This recommendation addresses the third trend. In order for there to be an incentive for prime contractors to consider ideas coming from their subcontractors, the Management Council should take a broad view of the contract change. This means that as part of the evaluation process, the Council can question if the SPI is good for the entire industry or simply good for one prime contractor. Give the contractor the opportunity to explain how the change will benefit the aerospace industry and invite subcontractors to comment on the proposed process. If there would be greater teaming between subcontractor and prime contractor ACOs as discussed above, this recommendation would not be a barrier for contractors.

4. Be more realistic with Rough Order of Magnitude (ROM) estimates.

This recommendation is based upon the fourth trend. Management Councils and those involved in concept paper construction must be given greater latitude in waiving ROM estimates. If a SPI has the potential for saving the Government money on a current contract, or if the new procedure may result in lower prices on future procurements, industry should be given the opportunity to try. It is apparent that some Government officials involved in the SPI approval process are rigid in their belief that all savings must be quantified. Give the contractors the opportunity to reform their processes without having to provide best guesses that may not prove to be advantageous to the Government. The benefit to the Government of approving a procedure that could work outweighs the cancellation of a proposal and industry disenchantment with the SPI system.

5. The Government should categorize SPI proposals and employ a "use it or lose it" philosophy with the Management Council.

These suggestions address the sixth trend. Regarding the categorization of SPI proposals, it is clear that not all ideas share an equal level of complexity. For the sake of expediency, give the ACO receiving the SPI the opportunity to determine whether the proposal warrants full Management Council consideration within the 120 day window or less evaluation in a shorter period of time. Many contractors and subcontractors note that their proposals center on ISO 9000 requirements. The approval of such changes could be done quickly with limited risk to the Government. On the other hand, some changes may affect the performance of the weapon system. It is in these proposals that the

Management Council should fully consider. In sum, empower the ACO with the authority to separate the simple from the complex proposals and assist the contractors and subcontractors in quickly making changes.

The second part of this recommendation attempts to deal with the problem of proposals being extended beyond the 120 day window. According to the respondents of the interview questions, proposals often reside on a Management Council member's desk for an excessive period of time. When this time is multiplied by the numerous stakeholders who must approval a proposal, the integrity of the 120 day decision period is not maintained. The Government should advocate a reasonable time for decisions to be made by members and if that time is surpassed, that member has waived his right to an opinion on a proposal. In the literature review of this thesis, one startling point raised about the SPI process is that the CAO must report the progress of the SPI weekly to DCMC headquarters. With the existence of proposals not being finalized during the required period of time, it is apparent that the required progress reporting is not incentive enough to complete proposals in a timely manner. The CAO must be responsible for either completing a proposal within the time period with full consensus, completing a proposal by waiving the rights of stakeholders who have not responded quickly, or document that a decision is not possible within the required time period.

C. RESEARCH QUESTIONS ANSWERED

1. Primary Research Question: How has the Single Process Initiative affected progress in the stream-lining of the acquisition process for subcontractors supporting the aerospace industry?

The SPI has been helpful to those subcontractors who are fortunate enough to have a good relationship with their contractors. Part of this relationship is open communication between the prime contractors and subcontractors. Some aerospace contractors such as the Lockheed Martin Corporation are concerned that their subcontractors may face a negative impact as a result of approved contractor SPI proposals. This contractor realizes that effective teaming can result in decreased costs and increased productivity across the aerospace industry.

However, what is a more common situation is a lack of good communication between subcontractors and prime contractors. Subs have said that some primes are not open to subcontractor proposals and that requirements flowed down from the primes are actually increasing costs and oversight. Thus, subcontractors have not been able to stream line their processes as readily as the prime contractors.

2. Subsidiary Question 1: What is the Single Process Initiative, to include the intentions of the Government in instituting the policy, the current policy, the projected benefits and who is responsible for the implementation of the policy.

The Single Process Initiative is a method by which a company may reduce multiple processes required by the Government on existing contracts. Using best

practices and commercial processes in lieu of military standards and specifications, a contractor is able to reduce costs and increase efficiency as long as performance requirements are still met.

The intentions of the Government in instituting the policy is to save money, obtain a better product and foster greater industry competition.

The current policy of the SPI is dictated by four separate memorandums published by the DoD. In these policy statements, the SPI is first introduced by Secretary of Defense William Perry. Secondly, the details of the SPI are revealed, to include the responsibilities of the ACO, CAO and the Management Council and the formulation and execution of SPI concept papers and proposals. Third, prime and subcontractor relationships are discussed. This memorandum focuses on prime contractors who are also subcontractors are encouraged to use approved SPI methods regardless of whether they are acting as a prime or subcontractor. Finally, the Subcontractor Single Process Initiative is introduced. In this memorandum, the heart of the policy is embodied in the following statement:

> To the extent that any prime contract process that are flowed down or imposed on subcontractor, are inconsistent with SPI processes accepted by the Government for use at the subcontractor's facility, prime contractors may substitute the accepted subcontractor equivalent process [Ref. 9]

One projected benefit of the SPI is the saving of millions of dollars by contractors. This money may be returned to the Government in the form of an equitable adjustment to the contract or an adjusted contract price. Also, the Government may save money in future contracts since processes may be improved on current contacts.

A second projected benefit is that the SPI will energize defense contractors and make them more efficient. Thus, the entire industry will see manufacturing improvements.

A third projected benefit is that with more efficient methods in place after a approved SPI, companies can look forward to greater profits in the future.

The responsibility for implementation of the SPI falls on the members of the DCMC. They are the lead facilitators to the contractor in the institution of plant-wide changes.

3. Subsidiary Question 2: How are the aerospace companies participating in the SPI and how are they flowing down adopted changes to their principal subcontractors?

Aerospace companies are participating in the SPI by considering possible SPI related changes across the board in their plants. Most also have standing SPI teams or at least ad hoc teams whose responsibility it is to develop concept papers and proposals. The areas that are being considered for SPI changes include quality assurance, soldering and parts control to name just a few.

Many prime contractors are not flowing down changes to their subcontractors yet. For those who are, most state that they are considering the opinions of subcontractors when making decisions regarding block changes. Also, many state that they are attempting to reduce redundant or parallel administrative controls for the subcontractor. Very few contractors are considering burdensome start-up costs by the subcontractors or

are allowing subcontractors to make unilateral block changes or submit protests to contractor changes.

4. Subsidiary Question 3: What are the key issues facing the subcontractors of the aerospace industry as a result of prime contractors implementing the SPI?

One key issue is increased costs. Because of company unique process changes instituted by the primes, there has been higher overhead costs for subcontractors. To comply with multiple customers, there has been redundancy in manufacturing, administrative, and quality controls.

Another key issue is that many subcontractors are not able to participate in the SPI process fully and do not have effective communication with prime contractors. This has resulted in acquisition reform savings not being enjoyed by all subcontractors.

A third issue is that the SPI process is often a burdensome, time consuming and a frustrating experience for subcontractors.

5. Subsidiary Question 4: How has the SPI affected aerospace subcontractor's processes, manufacturing plans and costs?

The SPI has affected subcontractor's processes when contractors have not included the subs in the block change decision making process. Subcontractors are having to make adjustments on an existing contract in the middle of a manufacturing cycle in order to comply with the needs of the contractor. Manufacturing plans are also changed when contractors impose new quality assurance requirements that are the result of an approved SPI. Finally, overhead costs borne by the subcontractor are affected when

contractors impose unique requirements on the subcontractor. This situation can be especially difficult if the subcontractor is working for several different primes and must comply with the new requirements of each.

6. Subsidiary Question 5: Is there a need for the SPI process to be changed based upon how it has affected the subcontractors of the aerospace industry, and if so, how?

First, it must be noted that most members of the aerospace industry agreed that the SPI has good potential. Many cite the success of the SPI in the reduction of military specifications and standards. But there are a number of individuals, subcontractors in particular, who feel that the initiative needs some refinement. This researcher agrees.

One change that would positively affect the SPI is by the Government working to help bridge the communication gap between subcontractors and prime contractors. If the Government representatives could encourage better teaming between these two industry groups, then more SPI proposals could be forwarded for consideration. Also, more teaming would keep subcontractors engaged in acquisition reform and financially healthier.

Another change to the SPI would be a streamlining of the proposal approval process. The Government can consider giving the CAO more power to waive excessive cost savings estimates if such estimates are an administrative burden. Also, the Government can consider ways to distinguish the less complex proposals from the more complex and decrease the approval time on those less complex proposed changes. In

addition, the Government can promote faster responses to the more complicated issues so that proposals are decided upon within the 120 day timeline.

D. AREAS FOR FURTHER RESEARCH

This study focused primarily on the aerospace industry. There are many opportunities for further research if the student were to consider:

1. How the SPI has affected software intensive industries. One of the respondents noted that there are unique difficulties in getting software related SPI changes because of the exceptionally dynamic nature of that industry.

2. How ACOs perceive the SPI. In the data collection portion of this thesis, the researcher had the opportunity to speak with many ACOs. In off-the-record comments, several noted that the SPI was highly regarded by high level DoD officials, but treated as a overwhelming burden by those who are actually implementing the initiative. They suggested that Management Councils are not committed to resolving issues quickly. Also, the reporting requirements and paper work involved in the proposals process takes a great deal of time that could be otherwise spent actually administering contracts.

3. Is the SPI really producing savings? A student interested in financial analysis could consider the proposed cost savings and evaluate whether the nominal totals (in comparison with the procurement outlay) justifies the expenditures of the SPI.

4. Is the Government really committed to the SPI? As noted in this study, contractors and Government employees voiced concerns over a lack of sufficient information about the SPI. Information concerning the SPI was readily available via the

Internet. Therefore, it is not known why mid-level Government managers and hands-on practitioners have not fully embraced the SPI.

APPENDIX A: CONTRACTOR QUESTIONNAIRE

Company: _____ **Spokesperson:** _____

Primary business focus: _____

Does your company act as a prime contractor only:

a) Yes

b) No - if so, please contact Capt. Anthony Winicki at 408-392-0842 so he can send you the correct survey. Thank you.

I. **Has the Single Process Initiative (SPI) affected your work as a prime contractor:**

- A. Very positively
- B. Positively
- C. Marginally
- D. Poorly
- E. No effect

II. **How is your company implementing SPI? (please circle all that apply)**

- A. Concentrating SPI changes in one area of business
- B. Applying SPI changes in all areas of business
- C. Proposing a target number of SPI driven changes
- D. Instituting an SPI Team
- E. Other, please explain _____

III. **As a prime contractor, are you aware of any problems that your subcontractors are having implementing the SPI?**

- A. Yes—Please explain what the problems are on the back of this sheet.
- B. No

IV. **As a prime contractor, are you flowing down the provisions of the SPI to the subcontractor level?**

- A. Yes (please go to the next question)
- B. No (Please go to question 5)

V. **How are you flowing down the provisions to your subcontractors? (circle all that apply)**

- A. Including the subcontractors when making decisions regarding block changes
- B. Reducing redundant/parallel administrative controls for the subcontractor
- C. Assisting subcontractors with burdensome startup costs in order to meet commercial specifications
- D. Allowing protests or unilateral block changes by the subcontractor
- E. Other, please explain _____

VI. **The literature states that the SPI was designed to meet specific goals, please rate how you perceive the success rate of these goals:**

	Highly successful	Successful	No impact	Unsuccessful	Highly unsuccessful
a) Promote the reduction of MILSPECS	☐	☐	☐	☐	☐
b) Increase compatibility b/t military & commercial standards	☐	☐	☐	☐	☐
c) Increased profits/Reduce costs	☐	☐	☐	☐	☐
d) Increased manufacturing efficiency	☐	☐	☐	☐	☐
e) Reduced impediments to technological innovation	☐	☐	☐	☐	☐

VII. **If there are differences of opinion between prime contractors and subcontractors regarding the implementation of the SPI, should :**

a) The Government through DCMC get involved and help resolve the problems

b) Industry should be left alone to resolve any disputes

c) Other, please explain _____

VIII. **How would you improve the SPI process?** _____

APPENDIX B: SUBCONTRACTOR QUESTIONNAIRE

Company: _____ **Spokesperson:** _____

Primary business focus: _____

Does your company act as a subcontractor contractor only:

a) Yes

b) No - if so, please contact Capt. Anthony Winicki at 408-392-0842 so he can send you the correct survey. Thank you.

I. **Has the Single Process Initiative (SPI) affected your work as a subcontractor:**

A. Very positively
B. Positively
C. Marginally
D. Poorly
E. No effect

II. **How is your company implementing SPI? (please circle all that apply)**

A. Concentrating SPI changes in one area of business
B. Applying SPI changes in all areas of business
C. Proposing a target number of SPI driven changes
D. Instituting an SPI Team
E. Other, please explain _____

III. **As a subcontractor, are you are having any problems implementing the SPI?**

A. Yes (please go to the next questions)
B. No (please go to question 5)

IV. **What specific problems are you having implementing SPI? (circle all that apply)**

A. Not being included by the prime contractors when block change decisions are made
B. Facing redundant/parallel administrative controls
C. Facing burdensome startup costs in order to meet commercial specifications
D. Not being allowed to protests or make unilateral block changes
E. Other, please explain _____

V. **The literature states that the SPI was designed to meet specific goals, please rate how you perceive the success rate of these goals:**

	Highly successful	Successful	No impact	Unsuccessful	Highly unsuccessful
a) Promote the reduction of MILSPECS	☐	☐	☐	☐	☐
b) Increase compatibility b/t military & commercial standards	☐	☐	☐	☐	☐
c) Increased profits/Reduce costs	☐	☐	☐	☐	☐
d) Increased manufacturing efficiency	☐	☐	☐	☐	☐
e) Reduced impediments to technological innovation	☐	☐	☐	☐	☐

VI. **If there are differences of opinion between prime contractors and subcontractors regarding the implementation of the SPI, should :**

A. The Government through DCMC get involved and help resolve the problems

B. Industry should be left alone to resolve any disputes

C. Other, please explain _____

VII. **How would you improve the SPI process?** _____

APPENDIX C. LIST OF CONTRACTOR CONTACTS

Prime Contractor Contacts

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Boeing ISDS, Aircraft and Missile Systems, KS
Stephen Johnson
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C.J. Machine, Inc. TX
Minnie Silva
Government Contracts
210-337-0200

Cubic Defense, CA
Lynn Kunster
Quality Control
619-505-2141

EFW, TX
Jim Howard
Quality Control
817-234-6901

Ferrotherm Company, Inc. OH
Emery Ceo
President
216-883-9350

Fidelity Technology Corp. PA
Robert Starr
Quality Control
610-929-3330

Gen Corp., CA
Stan Neves
Government Contracts
626-812-1942

General Dynamics Electronics, CA
Ken O'Neal
Quality Assurance
619-675-1900

General Electric Aircraft Engines, OH
Ed Metzger
Product Support Contracts
513-786-4748

Harris Corp., FL
Sam Cacciatore
Government Contracts
407-727-6900

Hughes Aircraft Company, CA
Susan Higgins
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ITT Avionics, NJ
Jack Ruben
Government Contracts
973-284-2004

Lockheed Martin Aeronautical Systems, GA
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National Airmotive Corp. CA
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Northrop Grumman Aerospace Corp., NY
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Primex Corp. FL
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Raytheon Aircraft Company, KS
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Jim Juve
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Rhonda Summers
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Allied Signal Inc.,
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Engineered Air Systems Inc., MO
Dave Walsh
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Gulton StathamTransducers Inc., CA
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Honeywell Defense Avionics Systems, NM
Paul Vernagelli
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Honeywell Military Avionics, MN
Jennifer Crawford
Government Contracts
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Hughes Aircraft Company, CA
Susan Higgins
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ITT Avionics, N.J.
Jack Ruben
Government Contracts
973-284-2004

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John Alston
Government Contracts
818-715-4990

Northrop Grumman Aerospace Corp., NY
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Pratt and Whitney Aircraft Engines, FL
Scott Dayton
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SCI Systems Inc., AL
Dave Lenger
Government Contracts
205-882-4230

Teledyne Electronic Technologies, CA
Duane Taylor
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916-636-7403

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